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SUPERFUND IMPLEMENTATION

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BEFORE THE

SUBCOMMITTEE ON
SUPERFUND AND ENVIRONMENTAL OVERSIGHT

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

FIRST SESSION

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SUPERFUND IMPLEMENTATION

TUESDAY, APRIL 14, 1987

U.S. Senate,
Committee on Environment and Public Works,
Subcommittee on Superfund and
Environmental Oversight,
Newark, NJ.

The Subcommittee on Superfund and Environmental Oversight met, pursuant to notice, in Newark, NJ, Hon. Frank R. Lautenberg (chairman of the subcommittee) presiding.

Present: Senator Lautenberg.

OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator Lautenberg. I ask that this hearing come to order.

This hearing is held under the auspices of the Subcommittee on Superfund and Environmental Oversight. I want to welcome everybody here today and to express my appreciation to the New Jersey Institute of Technology for being our current host. We have watched their development, including the recognition by the media of the wonderful work being done here, and we compliment them on that and, again, we appreciate the opportunity to be here with them.

Today marks the first field hearing of this Subcommittee on Superfund and Environmental Oversight. I want to make a few observations about this newly formed subcommittee.

My work on the Senate Environment and Public Works Committee and involvement with environmental issues over the years brings home a key point, that is that our environmental laws are only as strong as the commitment of those charged with enforcing them.

Too many times, the Congress approves legislation and rushes on to other things often failing to monitor the agencies that we have charged with significant responsibilities. In the last Congress, I devoted a good deal of time to amending our Superfund law. I worked to improve the law in committee, on the Senate floor, and as a conferee.

Just before the 99th Congress adjourned, we approved a tough new law with cleanup standards scheduled, a right to know section, and a radon protection program. We made great strides. Now, I am committed to seeing that the spirit and the letter of that law are appropriately implemented.

New Jersey has an enormous stake in a successful Superfund program. In the first 5 years of the program, EPA spent $1.6 billion, but it cleaned up only five national priority list sites. $1.6 billion later, we had five sites cleaned up in the 5-year period.

Not one of those original sites was in New Jersey. Not one of those sites was in our State as one of the five that were cleaned up. Yet, New Jersey has more national priority list sites than any other State. We are up to about 100 right now. EPA is reporting currently that some 8 additional sites have been cleaned up. EPA asserts that the Krysowaty site in Hillsborough has reached this stage. Yet, we are still only talking about 1 out of the 100 current sites in our State and 13 out of 951 sites nationally, 13 out of 951 sites cleaned up, and we are looking at a period of time seven years after the initial Superfund law was signed.

According to EPA Administrator, Lee Thomas, as many as 2,000 additional sites could be added to the priority list. The Superfund conferees expected these additions to occur by 1988.

The new law also imposes some site milestones. In October of 1986, there were about 25,000 sites in the Superfund inventory list. The law set a goal of completing preliminary assessments of all of these by January of 1988, the January that is coming up. Where such assessments indicate a hazardous release, EPA must complete actual site inspections, and they should complete them by January, 1989.

DEP reports that as many as 750 New Jersey sites will require site inspection review. DEP anticipates problems, as we have heard, in meeting the inspection mandate.

Over the next 5 years, the law also requires starting at least 375 new remedial actions—begin to clean it up. At least 275 site clean-up studies—that is to see what the problems might be—should commence over the next 3 years.

The key question for me and the purpose of this hearing is whether or not EPA is going to meet these milestones. Will the next 5 years of program echo the first 5 years, or are we going to see a program the Nation and New Jersey can be proud of?

We are here today to get some answers to these questions, to get some projections from EPA and the New Jersey Department of Environmental Protection, to get the citizens' view of the problem, a close-up view from those directly involved in some of these sites, and a view of some individuals with expertise in monitoring and critiquing the Superfund program.

Our goal is to see where we are going before we get there, to seek recommendations, and to identify possible trouble spots.

On the national level, we have seen some indications that the Administration is going astray. We saw this in the President's Superfund budget. It would fail to obligate all of the money that Congress appropriated for 1987. It contemplates spending too little in 1988.

We have also seen some bad signs from EPA on clean-up standards. We worked hard to write some tough standards in the law. When it comes to ground water clean-up, those standards must be the most stringent. Congress specifically stated in the law that the toughest standards apply.

Yet, EPA is now considering the contrary interpretation, one that would apply less stringent ground water protections.

I believe that interpretation is unlawful and shouldn't be applied. That is why I joined with other former Superfund conferees in contacting Lee Thomas, the EPA Administrator. Last week, we reminded him of what the law says and called for its proper enforcement.

I have also seen some trouble spots developing on the regional and State level. Over the next 2 years, EPA projects finishing clean-up of perhaps only one New Jersey site in addition to Krysowaty. I would like to know why we can't do it better.

EPA's own watchdog, its inspector general, has raised some questions about some State practices. The IG has stated that DEP may be taking too long to complete its clean-up studies, its so-called remedial investigations, and its feasibility studies. Such delays can slow down clean-ups, and I would like to get some answers about this today.

I have heard reports that EPA may be ignoring funding mandates for certain States costs. I worked on amending Superfund to provide Federal dollars for the costs of long-term operation and maintenance at sites. Yet, EPA and DEP are at odds over whether such funds should be available for operation and maintenance at the Krysowaty site. I would like to know why.

I have been hearing about concerns over the technical assistance grants program. This program provides for grants for citizens to hire experts to assist them in interpreting site information. It attempts to put the citizens on an equal footing with the technocrats, but EPA doesn't plan to issue the necessary implementing regulations until the fall.

So, citizens in New Jersey and across the country can't make use of these grants right now even though the need is there. I worked on putting this new program into the law, and I would like to know why New Jersians have to wait that long.

I have also heard that EPA may be shutting citizens out in another way, the way it writes feasibility studies. These are key documents where EPA lays out its cleanup alternatives Citizens can review and comment on these studies. The problem is that EPA may not be providing enough to comment upon, shifting decisions into later Superfund stages.

Cutting back on early and effective citizen participation is wrong, and I would like to make sure that we understand exactly what is taking place and get some feedback on this as well.

Today's hearing is an opportunity for us to work together. That is the mission, ultimately—citizens, technical experts, environmental agencies managers, and legislators to share information, to answer questions, and to push forward with our mutual goal, giving this nation the tough and effective Superfund program it deserves. We want a cleaner environment.

Before hearing testimony from our witnesses today, I would like to mention a few administrative details. As a standard practice in oversight hearings, the subcommittee is going to swear in all of the witnesses prior to their testimony. The oath will apply to all testimony that they present, whether oral or written, including the responses to written questions which may come at a later time.

The record in this hearing will remain open for one week for possible followup.

Because we have a lot to cover, I would like to ask of the witnesses that they summarize their written testimony. We are going to provide five minutes for each one to make that oral presentation. Again, the full written text will be included in the record.

At this point, I would like to call our first panel, Councilwoman Vecchiarelli, Mr. Maraziti, and Mr. Haley, to come forward.

[Witnesses sworn.]

Senator LAUTENBERG. Councilwoman Vecchiarelli, it is good to see you, Barbara.

STATEMENT OF HON. BARBARA VECCHIARELLI, COUNCILWOMAN, MARLBORO TOWNSHIP

Ms. VECCHIARELLI. Thank you very much.

Good morning, Senator. My name is Barbara Vecchiarelli, and I am a Councilwoman in Marlboro Township. I am a member of the Burnt Fly Bog Citizens Advisory Committee and am active with many environmental groups, including the New Jersey Environmental Federation and the National Campaign Against Toxic Hazards.

Nine years ago, my life changed drastically and has never been the same since and probably never will be. It was then that I learned that I was living less than a mile from two of America's most dangerous toxic waste dumps. Burnt Fly Bog and Imperial Oil are two of at least 20,000 toxic waste sites across the country contaminating our drinking water, destroying our natural environment, and threatening the health and safety of our families.

The threat posed by these dumpsites and other toxic hazards may be the number one hidden national security problem facing our Nation today. After a 3-year battle involving millions of citizens and thousands of organizations walking together through the National Campaign Against Toxic Hazards, we finally won a toxic waste cleanup program capable of beginning to tackle the thousands of abandoned waste sites across New Jersey and the country.

Senator Lautenberg, I would like to take this opportunity to thank you for the tremendous leadership you provided in the fight to strengthen the Superfund program. Time and time again when the chips were down and the bill was stalled, you stood up for the citizens of New Jersey and the Nation to keep the momentum going on this important legislation, all in the face of massive opposition from the powerful polluters, the Reagan Administration, and others who sought to weaken the bill.

Now that we have a new Superfund on the books, it is critical that we do everything possible to make sure the program is aggressively implemented and enforced. Senator Lautenberg, we are pleased to have you representing us in Washington as Chairman of the new Superfund and Environmental Oversight Subcommittee to make sure that EPA and DEP get the cleanup job done. We look forward to working with you in overseeing the enforcement of Superfund and other environmental laws.

Burnt Fly Bog is an area of about 1700 acres located in Marlboro Township. During the 1950s and 1960s, the site was used for the storage of waste oil in five unlined lagoons. Chemicals found at the site include PCBs, lead, arsenic, benzine, and others known or suspected of causing cancer and other health problems.

Discharges from these lagoons have contaminated at least 17 acres. Contamination has now spread to an adjacent 44 acre area known as the Wesley Wetlands.

The Burnt Fly Bog is located above the English Town Sands aquifer which supplies drinking water for more than 40 New Jersey towns. The Wesley Wetlands flow directly into Deep Run which goes into the Runyan watershed, the location of the well field for Perth Amboy's drinking water supply.

EPA and DEP have known about these hazards of Burnt Fly Bog since before 1979. Yet, today, 9 years later, phase I of the cleanup has yet to be completed. Meanwhile, contaminated liquids and sludge still remain in the original lagoons. Runoff from these lagoons continues to pollute the Wesley Wetlands with high levels of PCBs and lead.

Close to $3 million has already been spent on this site. Another $17 has been allocated to finish the initial phase of the cleanup of phase I, and the DEP estimates that it will cost an additional $12 to $16 million to clean up the Wesley Wetlands.

Imperial Oil is a five-acre oil blending facility located in Marlboro Township. Toxic wastes include PCBs, petroleum, hydrocarbons, and heavy metals. They have contaminated the soil, water, and a nearby stream.

In 1981, Imperial Oil signed a consent order with the DEP where the company agreed to assess the contamination at the site and to take any action needed to clean up the pollution. For the past 5½ years, Imperial Oil has continually violated this consent order, and the company continues to contaminate our community.

To date, the DEP and EPA have failed to take any action against this horrendous polluter, and cleanup has yet to begin. I find it inconceivable that our government agencies have refused to enforce our laws against Imperial Oil, particularly in light of the fact that this company has made millions of dollars through contracts with the Federal Department of Defense.

So, we have a situation where Imperial Oil is making millions of dollars from taxpayers' money while, at the same time, they are poisoning our community. I must admit that one question keeps crossing my mind. Is there any correlation between our government's reluctance to enforce the law against this polluter and the fact that the company has a cozy business relationship with another government agency?

Fortunately, the Monmouth County Prosecutor's office and the county Department of Health have stepped in to do the job that our very own DEP and EPA should be doing. Last month, the county successfully attained a grand jury indictment of Imperial Oil officials for criminal actions related to the release and abandonment of hazardous wastes.

One of the most important provisions of the new Superfund requires that EPA select cleanup plans to permanently treat the hazardous waste from these sites. That is, the wastes should be destroyed, detoxified, or treated wherever possible. It is critical that this new section of the law be aggressively implemented so that yesterday's waste will not become tomorrow's pollution.

Permanent treatment is crucial for cleanup of the PCBs and lead at the Wesley Wetlands and at the Burnt Fly Bog site which are directly connected to the recharge area for Perth Amboy's drinking water supply. Permanent treatment for the Wesley Wetlands may cost more than $60 million. However, under the new Superfund, the price tag should not prevent the implementation of a cleanup plan that will protect public health and the environment permanently.

Another critical provision of the new Superfund provides technical assistance grants for community groups so that we can hire our own independent experts to review government documents and decisions affecting the sites. According to EPA, these technical assistance grants will not be available until November, at the earliest.

This is unacceptable. Actions are being taken right now at the Burnt Fly Bog which affect our community. In addition, it is very possible that EPA and DEP will make several more critical decisions concerning the cleanup of both the Bog and Imperial Oil which will affect our community for generations to come.

We cannot wait until November for our technical assistance grants. It may be too late. We urge you, Senator Lautenberg, to press EPA to make these grants available as soon as possible.

In conclusion, our nine-year battle to clean up the toxic waste dumps in our community has been a roller coaster ride riddled with emotional twists and turns and ups and downs. It has been aggravating, it has been disappointing, it has been an endless barrage of endless promises. It has been moments of hopes and moments of despair.

Now, it is reality, and the reality is the sad destruction of our natural resources. We are now confronted with a critical choice. We can allow the continued poisoning and destruction of our community, or we can aggressively enforce the new Superfund and make sure these sites are cleaned up.

We look forward to working with you, Senator Lautenberg, to make sure that this new Superfund is a reality and not another empty promise.

Thank you for the opportunity to testify today, Senator.

Senator LAUTENBERG. Thank you very much.

Councilwoman Vecchiarelli, let me compliment you on the speed with which you presented your testimony. I assume you will go from this career to tobacco auctioneer or something of that nature.

Thank you very much. Mr. Haley.

Mr. Haley has an interesting community from whence he cometh.

STATEMENT OF TIMOTHY HALEY, SPECIAL COUNSEL, TOWNSHIP OF MONTCLAIR

Mr. HALEY. Thank you, Senator.

My name is Tim Haley. I am a partner in the law firm of Gordon and Gordon in West Orange, New Jersey. Among other communities in the State that we represent, we have represented the town of Montclair in relation to the radon problem.

I have submitted testimony to you, Senator, and I think I am going to stray a little bit from that testimony in terms of what I am going to say here today.

It was interesting for me to run into Joel Hirschhorn here in the audience this morning. I remember a panel that Joel and I did about 4 years ago down in Washington for the Subcommittee on Appropriations for HUD and Independent Agencies on Superfund implementation. The question was, why isn't Superfund being implemented fast enough? That was the question that was being asked in 1983. Interestingly enough, it is the question that is being asked by yourself today and, I think, asked quite correctly.

From the perspective, I think, that we have seen in Montclair, the basic problem is that we are dealing with some difficulty decisions which are not being made on the merits, and that is why we are running into the types of confidence problems and, I think, serious public confidence problems in the program that we have today.

The problem in Montclair, as the Senator is well aware—and we thank you very much for the help that you have given us—is that we have radiation under the homes. The Center for Disease Control has issued a public health advisory advising, as of December of 1983, that the problem be permanently resolved within 2 years.

I think, to a certain extent, we have realized that settlement of that type of problem involving really an extremely massive cleanup within 2 years is unrealistic for the government to do. However, the problem that we have in Montclair today is that the situation is actually worse than it was three years ago.

As the Senator is well aware, we have had people who have been out of their homes for really upwards of 2 years now at this point, and the reason for that is that the State, in my opinion, in a very ill-conceived and ill thought out program attempted to excavate materials from the soil and originally ship them to Nevada. As a result, we have approximately 5000 barrels of radioactive waste stored literally in the middle of a residential neighborhood.

Now, the situation has gotten so bad, Senator, that as a result of that, the town and Mrs. Tasco who is one of the affected homeowners have had to take the State to court and sue them to remove the barrels. Fortunately, we were successful.

But I think the thing that really disturbs me more than anything else about the way in which the response has taken place here is that the State specifically has given us absolutely no reason for not moving forward with a solution to the problem. It is a very difficult thing to explain to a woman who has been out of her home for 18 months and who was originally told she was going to be out of her home for 6 to 8 weeks and whose furniture is in her home and most of her clothes are in her home, her life is in her home—she is an elderly woman—it is a very difficult thing to explain to her why the government isn't solving her problem when the government comes to you and says essentially this: this material can be moved and can be stored safely in a number of ways.

The question becomes, why doesn't the government do that? I would submit to you, Senator, that the basic problem here is that what we are concerned about primarily—or it would seem that the government is concerned about primarily in these types of decisions—is what is the political impact of the decision.

In what I would say are the macro scale terms of looking at what are the overall ramifications to the agency of the decision, individuals like a 70-year-old widow like Mrs. Tasco, her concerns, I think, become very small in that scale. I think that really is what the problem is with Superfund today.

It is that no one is looking honestly at what the effects are on the little person. How is this changing her life? I can't think of anything, Senator, that is more disruptive than the situation in which some of our people find themselves where they are told you shouldn't even walk into part of your home or the second situation of the Fundy's and Mrs. Tasco and the others who have been out of their homes for a year and a half.

How does that—and it is a question I really posit to you—how are we to get sites cleaned up when we see situations such as the type of situation we have in Montclair where there is absolutely no public confidence in the program because of the fact that people such as Mrs. Tasco have been out of their homes for a year and a half.

I submit to you, Senator, that that is the problem, really, that the committee should focus on today. It is that there is a public confidence problem in Superfund, and it is up to you, I think, to get to the bottom of it to make decisions made on the merits and solve it really for the benefit of all of us in New Jersey.

I thank you very much.

Senator LAUTENBERG. Thank you, Mr. Haley.

As I said, your full testimony will be in the record. We have it here.

The question you pose is not an easy one to answer, and that is, how do you explain this in a satisfactory manner when persons who put their money in a home, put their life in a home, finds out that they can't occupy it. I drive past those barrels almost daily. As you know, I live three blocks from there.

Thank you very much for being with us.

Mr. Maraziti.

STATEMENT OF JOSEPH MARAZITI, GENERAL COUNSEL, TOWN OF BOONTON

Mr. MARAZITI. Good morning, Senator.

I thank you for the opportunity to be here. I stated up front that I do not have a prepared statement because I am an 11th hour addition to the panel, literally. I spoke with Seth Monies last night at 11:00 or thereabouts.

I am very pleased to be here to give you the perspective of the municipality's role in dealing with hazardous waste pollution. I am the attorney for the Town of Boonton, and 1982 was a very critical year for the Town of Boonton, because during that year, Boonton learned of two serious hazardous waste problems that affected its citizens.

Boonton has found out the hard way that local governments are indeed on the front line in dealing with the emotional, financial, political frictions, fears, and dilemmas that are occasioned by the discovery of a polluted site in a community.

Boonton has two problems, as I mentioned. They are very separate and distinct. One concerns a Superfund site which is Pepe field. Until 1982, it was enjoyed by the residents of a residential neighborhood, a vest pocket park, so to speak, with a couple of tennis courts and a softball field and some playground areas for young children.

In 1982, it was put on the Superfund list in December of that year, and there it remains. There has been no remedial action of any importance taken at the site. Anything that has been done in terms of dealing with the evaluation of the immediate health risk has been done by the Town of Boonton. The Town of Boonton decided to move ahead on its own in dealing with the problems faced by that site.

The town has expended considerable amounts of money engaging engineering consultants to evaluate the public health risk, close the field, fence it off. Mr. Chairman, you know well what that site looks like because you visited that site on a muggy summer morning and had the opportunity to see it first hand.

Boonton filed a law suit to respond to the contamination at that site and did so because of the then end and the approaching end in the statute of limitations with respect to the opportunity to recover for natural resource damages. At the time that Boonton filed that law suit, it was very unclear as to whether a municipality could act as a trustee to assert claims for damages to natural resources.

Judge Ackerman ruled in a precedent setting decision in August of 1985 that municipalities indeed under Superfund could present the claims as the trustee of natural resource damages. That set a precedent nationwide which was responded to by forces in the House of Representatives which, during the Superfund amendment process, sought to overturn the result in the Boonton case.

That would have had a disastrous impact on a municipality's ability to take the lead in cases where it was necessary to take the lead, and I want to thank you, as the other panelists have done this morning, for your very aggressive, immediate response to Boonton's cry for help in that situation. Your role as a member of the conference committee was invaluable in overturning that effort in the House of Representatives, and we have come out with a Superfund reauthorization act that not only preserves the right of municipalities to take initial action but in fact strengthens that right and also emphasizes the role of natural resource damage recoveries.

Now, the site that I am talking about is a small site. It is three and a half acres. It is a former recreational area, and we are now waiting for the Department of Environmental Protection to present the remedial investigation feasibility study that will answer many questions about what happens with that site and also will break the logjam in the litigation that now is created by the absence of that RIFS.

We have been disappointed that it is taking so long for anything to happen with respect to that documentation. We have been rather patient. We have waited faithfully since 1982 for something effective to come forward and haven't yet seen it.

Boonton was not as patient, however, with respect to the other contamination problem that occurred in 1982 because that contamination problem affected the public drinking water supply system. It was discovered that the levels of volatile organic chemicals were in the finished water in the Boonton water supply system.

That contamination problem, oddly enough, never made it to the Superfund list although the problems presented by that issue were much more immediate in terms of the health risk to a broad area of the population. We have moved very impatiently and aggressively in responding to the contamination of the water supply system, and we got into the question of cleanup standards that you referred to in your opening remarks.

The governing body of the Town of Boonton in 1982 had to grapple with the issue as to what level of cleanup they would shoot for in terms of the water supply system. At that time, there was very little guidance with respect to that.

We were faced with the maximum contaminant levels that DEP was using at that time which were extremely high which the Town of Boonton decided not to accept as guidance, but Boonton chose instead to seek toward zero contamination of the public water supply system, and every bit of information that has come in from the scientific community since then has reinforced the very conservative approach that the town took at that time.

I would simply urge that any effort to relax the groundwater contamination cleanup standards be fought at all costs, because we don't really know what the long-term health effects, the synergistic effects, the cumulative effects of exposures to even very minute quantities of these contaminants will do not only in terms of cancer but also in terms of damage to other bodily organs and the mutagenic effect is one that is extremely of concern.

Boonton resolved the problem by putting in activated carbon filters which kept the concentrations down to zero in the finished water supply, over the objection of the industry which also was a defense contractor which sought to argue that there really was no proof that there is any harm from taking exposure to low levels of contamination. We didn't accept that argument.

I thank you for this opportunity to be here.

Senator LAUTENBERG. We are pleased to have you with us, and we are grateful that you did come in, not as a pinch hitter but as an addition to the first panel. I am directed to point out that in each case, each of you has a rather unique perspective.

Ms. Vecchiarelli is a member of the Burnt Fly Bog Advisory Committee. It is a very hard-working, very committed group and, as I think everyone here saw, she is able to give a lot of information in a fairly short period of time. That is because she knows the subject so well. We appreciate it.

Mr. Haley, special counsel to the Township of Montclair, as we heard from his testimony has problems that are unique because of the nature of the cause and the fact that this, as opposed to many of the other problems with the radon material, man created.

Mr. Maraziti who came in at the last minute is counsel, as he indicated, for the Town of Boonton in Morris County, and he has worked very actively and forcefully and effectively, I must say, even though the results are not complete yet. You have the process moving very well, and some large part of the results are in. You have created a whole judicial agenda that others can look to as an example of what can be done when a community has the will and the determination to get the job done.

We are going to have testimony from Mayor Saul Hornik. He is going to be submitting that for the record. (See p. 83.)

Mr. Maraziti, I would like to ask you something about the RIFS that Boonton is waiting for. According to EPA records, the study began in September 1984. It is still not complete. Is that correct?

Mr. MARAZITI. That is correct. The information that we have as the result of a meeting with DEP officials in March of 1985, as I recall, was that at that point, the contractor for DEP had been selected, the procurement process had been completed, and that the study was about to commence.

Now, my information at this point which is informal is that the RIFS has not yet been submitted in satisfactory form to DEP. It has been, in fact, from my information, returned to the contractor on a couple of occasions for further work.

I haven't seen it. I don't have any idea what it says. Boonton is very anxious to know, and certainly the residents who are around that site are indeed growing impatient about the delay.

Senator LAUTENBERG. Does two and a half years seem to you to be an unreasonable period of time in which to get this done?

Mr. MARAZITI. Well, I answer that question recognizing fully the enormity of the problem nationwide and in New Jersey and recognizing also the dedication of many of the State and Federal officials, and I recognize that many of them are over-burdened and perplexed by the difficulties, but I think that that delay is intolerable. This is a site that has been identified for the residents of the area as one of the priority sites in the entire nation, and we have not seen any effective, continuous response on the part of the agencies charged with the responsibility.

Senator LAUTENBERG. Mr. Haley, from the viewpoint of the citizens that you have contact with, particularly in Montclair, what do you see as the major failing besides noncompletion of the task? Do you see a point at which the system breaks down?

Mr. HALEY. I have been involved, I think, in two situations in New Jersey which are very, very similar, Senator, the dioxin problem in Newark on behalf of the residents down there which obviously we all know about, and the radon problem in Montclair. The interesting part, I think, in both situations the response has been almost identical.

In each case, the Centers for Disease Control has issued a health advisory and made recommendations as to permanent cleanup. Frankly, I am not aware of any other sites in New Jersey, and there may be some, but I am just saying I am not aware of them, where the Centers for Disease Control have issued public health advisories saying that it is unhealthy to habit, basically, to live in these situations.

We see an initial flurry of governmental activity. I think someone once called it dump stumping, in a sense. We see everyone coming out. There is a flurry of activity, and nothing much gets done.

But where it seems to break down is at the level of disposal. For example, we have down here in Newark 500 cargo containers full of dioxin sitting alongside the Passaic River which the company has recommended stay there so that we have a toxic waste dump in the largest city in New Jersey. And in Montclair, we see the same thing. We see 5,000 barrels of radioactive waste sitting, realistically, in the middle of a residential neighborhood.

So, the problem, as we see it in these two, I think, somewhat unique situations, is that when there is a tough call to be made on disposal, the responsible officials don't seem to be willing to make it. That seems to be the point at which it breaks down.

So, we find ourselves in a position similar to Boonton where we have been waiting since, I think, October of 1985 for a record of decision. We had a public hearing on the RIFS in 1985, and in Montclair we still have no decision.

So, I would suggest to you that it is at that point, really, where the difficult decisions have to be made that the system seems to break down.

Senator LAUTENBERG. You are familiar with the proposal on these technical assistance grants?

Mr. HALEY. Yes.

Senator LAUTENBERG. Do you think that would have been helpful if the citizens in the community had a chance to look at this with some of the expertise that was available?

Mr. HALEY. I absolutely believe that. We in Montclair have a somewhat different situation. Take the Boonton situation, for example. They are talking about what the effects are of low level contamination. People want to know that. They also want to know what the potential remedies are.

In terms of the health effects, the Centers for Disease Control have been very up front in Montclair in saying that this is a problem. But in terms of allowing us to explore technical solutions, I think it would be very, very helpful to the citizens.

Senator LAUTENBERG. Would the people that you represent support some kind of onsite treatment for that material?

Mr. HALEY. Well, the problem that we have in Montclair specifically is that there is no room, Senator. I think, as you know, we are talking about a very densely populated residential neighborhood. So, in that sense, we are not talking about, I think, the more typical abandoned industrial site in Montclair.

So, in that sense, I don't really see in our situation where on-site treatment is practical because of the nature of the type of problem we have, but I can tell you from other situations in which I have been involved the people would rather see on-site treatment, quite frankly, than containment which is largely what we have today.

Senator LAUTENBERG. Right now the property is unusable. If there was something that could make this area habitable again, I would think that it would be——

Mr. HALEY. Certainly, we are open to all options in terms of solving the problem. It is just that in the nature which we have, I don't know where we would do that in Montclair, I guess, is just basically what my statement is.

Senator LAUTENBERG. Barbara Vecchiarelli, your testimony was fairly thorough, though rapid, and you provided us with some information that we just wanted to revisit for a moment. What impact has the Burnt Fly Bog site had on the community? How do you describe it?

Ms. VECCHIARELLI. Impact on the community?

Senator LAUTENBERG. Yes. On the individuals in the community.

Ms. VECCHIARELLI. Well, after 9 years, people are getting very used to living with the broken promises that it will be cleaned up. The problem over there is that it has been—I meant it when I said a roller coaster ride. When the feasibility study was first done in 1981, they had said that the problem is not as bad as we thought it was. It was going to be—Dr. Molin quoted this, and I never let him forget it—a piece of cake to clean it up.

Unfortunately, that is not the story. That feasibility study was not done thoroughly enough. More money needed to be issued for more studies. They finally got down to the first phase of the cleanup around 1985.

They had never even completed the first phase of the cleanup. Then, they found that the uplands part which was part of the first phase was contaminating 44 acres of the Wesley Wetlands which have such high levels of PCBs and lead that the EPA is now trying to figure out how to redirect the water from the Wesley Wetlands because of its going into Deep Run which goes into the Runyan watershed which supplies the drinking water for Perth Amboy, that they have to remove the hot spots of the PCBs.

The other problem is the lead in the water there, if it is in water that has low pH, the lead will travel very rapidly. If the pH level stays high in the water, the lead will stay contained.

Now, the effect that it has on the community is one of great concern concerning our drinking water supply. Is it really contaminated? Are we being told the truth? Is it true that the English Town Sands aquifer is not contaminated? Can we believe what they are telling us? Because, after all, this supplies water to over 40 towns throughout Monmouth, Ocean, and Middlesex Counties.

So, you live with a constant fear of what is really going to happen at that site, and you also live with kind of like is it really going to be cleaned up. I don't believe, and I think the DEP would agree with me, that it can ever be cleaned up to be usable again, ever. The damage is just too far gone, and the more they test it, the more they see that.

I do want to say that I agree with one thing. If it is possible to have on-site incineration for an emergency to clean up a site rather than containment, I agree with that. The fear with that is they are afraid that the site will be used to incinerate other toxics from other sites, other hazardous waste.

So, you live with it. I hope not to be here again, because I hope that the problem gets solved, but if I have to be, I will be.

Senator LAUTENBERG. Well, we would expect that.

What I hear you say, in addition to what must seem an interminable delay, is the lack of information available to the citizens; not really knowing how to get your hands on it. Obviously, you would think that those technical assistance grants are pretty important.

Ms. VECCHIARELLI. Absolutely, because every time we get information from the DEP or EPA, it is not what we expect it to be. They say we are going to come down, give you this news, and we get the news, we don't understand it all, and then the next time it is different news, and, well, we did this study but this changed since then. It is an on-going problem of not being specific. I guess, in some instances, you can't be too specific when you are dealing with an atrocity like Burnt Fly Bog.

Senator LAUTENBERG. Well, the problem also, I am sure you would agree, is that the citizens just don't have the same resource for evaluating a recommendation or program that the government has or that industry has. That is one of the reasons that we wanted to get those grants out there and say look, if you have a problem in your community, here is a way that you get some money to finance a study. The expertise that is required is often costly, often hard to come by in addition to cost.

Ms. VECCHIARELLI. I believe if we had that technical assistance money for the group way back before 1981 when the first feasibility study was being done, we may have been able to get more information and realize that what they did first was wrong. I believe that the citizens—they live there, it is their back yard, it is their life, like they said, it is where their children are growing up. They need to know the effects of the toxics that are at the site, what can they do in the long term, and to understand exactly the different methods that could be used to either take it away, incinerate it, or whatever.

I think if people have a better understanding of the reality of everything, it may not be easy to live with, but it is easily accepted then.

Senator LAUTENBERG. Sure. They reduce the anxiety level, for one thing. It is possible that it is not as dangerous or as threatening as it seems.

Ms. VECCHIARELLI. But it is, Senator.

Senator LAUTENBERG. No, I am not suggesting that anybody ought to breathe easier or drink more water without knowing what is there, except that having those grants available is valuable in several ways, in studying how the problem gets solved, in permitting people to understand what the threats are to them.

Mr. MARAZITI. Senator?

Senator LAUTENBERG. Yes, Mr. Maraziti?

Mr. MARAZITI. If I could just make one point about that, I think the point that you hit on is very important about industry. Industry, obviously, has a vested interest in commenting upon and trying to shape what the RIFS do and what the recommendations are.

Generally speaking, my experience has been that it is clearly towards exculpating them from liability and decreasing the cost of cleanup. That is why I think the technical assistance grants are very, very important, because it at least provides some mechanism for a poorer citizenry with less economic viability to be able in some sense to compete with industry in terms of shaping the solution.

I think that is a very, very important point in terms of technical assistance grants.

Senator LAUTENBERG. Thank you very much for your testimony. If any information comes about that you think is of value, you are free to submit it.

The next witness is Chris Daggett. Mr. Daggett, as you heard when we introduced the first panel, we are reminding people that they are under oath.

[Witness sworn.]

We invite you to summarize your statement and to try to keep it within five minutes. If you have to run over, not too long, please. We appreciate it.

Mr. DAGGETT. I will try to keep it short.

Senator LAUTENBERG. Okay.

STATEMENT OF CHRISTOPHER DAGGETT, REGIONAL ADMINISTRATOR, REGION II, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. DAGGETT. Thank you, Senator.

My name is Christopher Daggett. I am the Regional Administrator for the United States Environmental Protection Agency, Region II. This region includes the States of New Jersey and New York, the Commonwealth of Puerto Rico, and the United States Virgin Islands.

I appreciate the opportunity to review with you Region II's experience in carrying out the Superfund program both under the Comprehensive Environmental Response Compensation and Liability Act, CERCLA, and under the recent Superfund Amendments and Reauthorization Act of 1986, more commonly know as SARA.

As requested by the Subcommittee, I will focus my testimony on our activities in New Jersey.

New Jersey has more sites on the national priorities list for Superfund than any other State, 100. This fact can be attributed not only to the prevalence of the chemical industry in New Jersey but also to the State's policy of aggressively seeking out and identifying candidate sites for the list. EPA Region II and the New Jersey Department of Environmental Protection have developed what I consider to be an effective partnership in dealing with these sites.

The following facts which are expanded upon in detail in my full testimony will illustrate our work together with the State.

To date, EPA and DEP have completed preliminary assessments on 1015 sites in New Jersey out of an inventory of 1275 potential sites. These have led to 420 site investigations which, in turn, have produced the 100 NPL sites.

So far, some kind of State or Federal action is underway at 95 of those 100 sites. This action progresses through several stages, a remedial investigation, a feasibility study of remedial alternatives, a record of decision which selects the remedy, a detailed design of that remedy, and, finally, implementation of that remedy.

The sites are categorized as either State or Federal lead and as either fund or enforcement lead. Enforcement lead sites are those where we have identifiable responsible parties with whom we negotiate to carry out the work.

So far, since Superfund was first passed in 1980, EPA has obligated approximately $147 million for work at New Jersey sites. In addition, through enforcement actions, EPA has reached agreement covering over $30 million in private party litigation.

Under Superfund, 82 remedial investigation/feasibility studies are either completed or underway while 13 sites are being addressed under other authorities such as State water authorities. We have completed 27 records of decision at 25 sites. A ROD, in some cases, may cover only part of the full remedy.

Remedial designs are underway or completed for 22 sites and will start shortly at the other three. Some form of remedial action has been completed or is underway at 13 of these sites. The remaining remedial designs are scheduled for completion over the next year and a half.

A question that creates much misunderstanding in the Superfund Program is how many sites have we actually cleaned up. There is usually a significant gap between the completion of a remedial action and the point where we can say a site has been deleted from the NPL. The reason is that years of site pumping and monitoring may be required to ensure that the remedy is performing as designed. During that time, by law, we cannot delete the site from the NPL.

Another important piece of the cleanup picture is EPA's Superfund removal program. This is an authority separate from the remedial program, and it may be used at sites where an imminent threat to the public health or environment exists whether or not the site is on the NPL.

In the removal program, we can move quickly to abate the threat without waiting for the full deliberate process of the remedial program to be completed. Subsequent action under the remedial program may or may not be required.

Since Superfund began, EPA has spent over $8 million on more than 40 removal actions in the State of New Jersey.

We were asked by the subcommittee staff to address specifically the issues raised last year by the EPA Inspector General's audit of how cooperative agreements between EPA and the New Jersey DEP under CERCLA were administered by the State. The auditors' report which is dated September 30, 1986 raised a number of issues having to do with the timely completion of remedial investigation/feasibility studies and with the documentation of costs associated with the projects.

In general, both EPA and DEP found the auditors' recommendations to be both accurate and constructive, and a good many of them are being implemented.

With respect to the recently passed Superfund amendments, there is no doubt that some of the new requirements will lengthen the cleanup process. However, we believe the process will be a better one because of such features as the emphasis on permanent cleanup and the assurance of full State involvement as well as that of the public and responsible parties.

There are other aspects of SARA, however, that should enable us to do a significant amount of mitigation faster in certain cases. For example, the expanded removal or emergency authority up to $2 million in one year's duration compared with $1 million in six months should enable us quickly to perform major work at many Superfund sites. We are reviewing all NPL sites for likely candidates.

I would like now to focus more specifically on Region II's experience with the program since the passage of SARA. It is worth noting that the hiatus experienced last year while waiting for Congress to pass SARA resulted in a significant slow-down of the pace of the Superfund Program nationally and in this region. Most of the site work was put on hold or delayed.

However, despite this slow-down, we were able to maintain a relatively high level of activity in New Jersey because the State extended itself to advance State funds pending Federal reauthorization. New York did also.

Because the loss of momentum in New Jersey was minor, we have, since the passage of SARA, been able to allocate the highest level of funding for any State to New Jersey's Superfund Program for fiscal 1987, more than $80 million or about 20 percent of the national remedy program. We have already obligated $47 million of these funds.

Before the end of the fiscal year in September, EPA and DEP plan to start 14 more remedial investigation/feasibility studies in New Jersey. We have targeted 10 records of decision for signing, and we expect to start or continue 6 remedial actions.

With respect to implementing the new requirements of SARA, one of our first tasks is to identify the range of State and Federal standards that may apply to site mitigations under the applicable or relevant and appropriate requirements, more commonly known as ARARs. That is one of the tests under SARA.

We have met with the DEP and asked for copies of all State standards that might apply. We have also asked the State to identify site specific ARARs for upcoming records of decision where timing is critical. We have received from the DEP and are now reviewing the first group of those proposed ARARs.

SARA also spells out a requirement for full State involvement in all Superfund decisions. This is a concept already well established in Region II. Since Superfund began, meetings have been held at the division director level with DEP on a frequent basis to discuss and resolve both site specific and overall programmatic issues. DEP comments on all records of decision and often participates actively in the briefings I receive prior to signing them.

With respect to the availability of State remedial funds, New Jersey, like New York, has established a large trust fund for addressing locally identified hazardous waste sites and for providing the needed State match for Superfund.

SARA also codifies previous EPA practice in community involvement. Both EPA and DEP had already established programs of outreach and citizen involvement at all Superfund sites under CERCLA and will continue them under SARA. However, SARA does add a significant new dimension with the authority to provide technical assistance grants to community groups at NPL sites.

I know that many groups are anxious to avail themselves of these grants as soon as possible. However, SARA makes it clear that EPA must establish regulations before the program can begin.

There are many difficult issues to be resolved with respect to these grants. For example, who and what groups should be eligible to receive them? What activities should be eligible for funding? Under what conditions should EPA consider waiving the $50,000 ceiling and the 20 percent match requirements? Who should provide the support and training needed for communities to administer the grants, EPA staff, EPA contractors, or State staff? Who should administer the program, EPA or the States? Finally, what role can municipalities play in this program under SARA?

EPA believes these difficult issues should be resolved through a process of full public discussion. There is now a draft advance notice of proposed rulemaking circulating through EPA, and we hope to publish it this spring for public comment. The agency then expects to publish an interim final rule this fall, after which grants can be made.

SARA also spells out further requirements for Federal facility sites on the NPL. So far in New Jersey, there are three such facilities, Fort Dix, the Naval Weapons Station at Earle, and Lakehurst Naval Engineering Center, and another five that are undergoing hazard ranking system scoring. We expect eventually to rank about 20 more sites.

At the three existing sites on the list, remedial investigations are either complete or underway.

It is clear that many challenges face EPA and DEP in carrying out the requirements of SARA. A special challenge for the State will be the requirement for each State to identify, by October of 1989, sufficient hazardous waste disposal capacity for a 20-year period. To help address this issue, EPA has established a working group at the national level. The agency's approach is intended to be one of reasonableness. We want to work with the States to encourage them to take steps to ensure that the capacity is available. The work group is in contact with the National Governors Association and also with such State specific groups as New Jersey's Hazardous Waste Siting Commission.

With respect to funding levels, EPA is confident that enough money has been allocated to carry out the program planned in fiscal 1987 in New Jersey.

The challenge of this program is certainly great. It will require concerted effort by EPA, the States, and local governments. It must be met in a way that assures the public and the Congress that the full degree of protection afforded by the Superfund law is in fact provided.

I appreciate your attention. I and members of my staff who have accompanied me will be pleased to answer any questions that you have.

Senator LAUTENBERG. Thank you very much, Mr. Daggett.

We noted with interest the share of funding that was available out of Superfund altogether, including Superfund I, if I may call it that, and SARA. Unfortunately, we note that because of the special character of New Jersey's industry of past years and the accumulation of this high number of NPL sites, we therefore need more assistance and more help from the Federal Government and EPA and, of course, the State's own aggressive and very positive steps to create a supplementary fund or its own fund to move things along.

I know how diligent and how concerned you are about the work that goes on within your region. I would like the record to note that I, for one, have found you always responsive and found you always seriously concerned about the problems as we present them to you.

I don't think, I must say, that the same exists generally through the agency that you represent very well. I still think that there is a reluctance to accept the reality of the new Superfund law as it finally was enacted, and I see it in its budgetary requests, and I see it in what I consider still relatively fundamental disputes about what was intended to be, what the congressional intent was when we designed over a very long period of time and very arduously a very specific law.

There were complaints at that time that the Congress was trying to micro-manage the Superfund program, to micro-manage the agency. Honestly, I would have to tell you that is probably true because of a very disappointing 5-year experience in the initial phase of Superfund.

A lot of it had to do with learning and understanding and developing the expertise necessary to deal with a very, very complicated job. But there is, as I see it, often a tug of war between the Congress, communities, and the agency. While I do feel that there is a fairly serious intent on the part of the agency to get the job done, I think, at times, Chris, we still wind up debating things like intent and, at times, the mission because that is obviously dealt with in a very significant way when we outline the funding, the remedy chosen for dealing with sites.

One of the questions that comes up continuously is the Lipari landfill. We have discussed that issue on many occasions. The reason that site needs review continually is that, (a), it is the most threatening, it is the number one site on the priority list; (b) is the question of whether or not the remedy finally decided upon is satisfactory to clean that up.

It is my understanding that EPA, despite some questions raised—let me not color it with that—does intend to continue with the flushing process. But it is not clear as to how many of the roughly 155 chemicals there will be treated, is it?

Mr. DAGGETT. No, I don't think that is perfectly clear. We will get a better handle on that, I think, through the design phase as we do some of the testing of the process, and then I think we will ultimately get our best understanding of that as we go through the first phases of the flushing operation.

Senator LAUTENBERG. It is also unpredictable, isn't it, as to how clean the site is going to be after the flushing process is finally completed.

Mr. DAGGETT. I think we are somewhat confident that the process will at least take out all the water soluble chemicals and leave behind the insoluble chemicals, as we have discussed. I recognize that there are any number of people who have analyzed this, and people have differing opinions. We have looked at this, and we have looked at this very intensely over a long period of time.

As you know, at your request and the request of Senator Bradley and Congressmen Florio and Hughes, we have looked at it yet again. We feel confident that the process we have chosen is indeed a good one. As you know, it also represents an innovative technology approach which Congress has urged upon us. We completely concur with that urging, and we feel strongly that this is something that falls in that area, and as a matter of precaution, as we go through that process, we are going to monitor it closely. As we have indicated to you and to others, we feel strongly that if it doesn't yield the kind of results that we predict and think that it will, then we will change that remedy as appropriate.

So, we don't by any stretch of the imagination see that this is a choice that we have made that is locked in stone and that that is it, but we do feel strongly that we should go forward with what we have chosen now and see whether in fact it yields the kind of results that we think it will.

Senator **Lautenberg**. It has been challenged by another department of government—I think OTA—and they are going to be testifying later.

I wonder how long we wait before we test or confirm that the yield that we wanted from this—by yield, I am talking about how clean we have gotten this site.

Mr. **Daggett**. I think we have said all along that we will be looking at it, and we should be able to tell within the first couple of flushes as to the extent to which we have been successful and whether it is conforming to our predictions. If so, we plan to continue with it.

I might add that, as you know, we have also reviewed in great detail the Office of Technology Assessment report, and, as you know, we don't agree with it and have said so and stated our reasons very clearly through our work. I, today, still stand by that analysis, and I stand by the decision we made. I think that time will tell as we go through the actual cleanup process whether indeed we are correct, but we feel we have made a thorough review of this site, and we stand by the decision.

Senator **Lautenberg**. How long more might it take before you feel that you have made the correct decision in choosing the flushing process?

Mr. **Daggett**. I don't know if I have exact dates. I believe the schedule is that the design process of the remedy will be completed later this calendar year.

Senator **Lautenberg**. What was the original expectation? Do you remember that?

Mr. **Daggett**. The original expectation on the design completion?

Senator **Lautenberg**. No, of a serious evaluation of the process. I know that you went in there believing that that process was the appropriate process.

Mr. **Daggett**. Right.

Senator **Lautenberg**. But now we are talking about a reevaluation. I think that is certainly appropriate. You are not still standing on the flushing process and saying that you are willing to bet your reputation totally on the fact that this process is going to do the job.

Mr. **Daggett**. What I have said is that we, as you know, completed the record of decision sometime in the latter part of 1985. I think September of 1985 was the signing of the record of decision. Since that time, we have had a number of people question it, the OTA report, the analysis. We have gone back in and, as I indicated, we analyzed the whole situation.

We stand by that decision and throughout have been proceeding with the design phase of that cleanup. That design phase is what we are now in where we are actually designing the remedy we have chosen. That should be completed by the end of this year, and following that, we will actually implement that remedy.

As we implement that remedy, we indeed will monitor it, analyze it, evaluate it as we go along, and should we find that it is not yielding the results that we predicted it will, then, yes, we will reevaluate the whole remedy.

Senator LAUTENBERG. Did you when you began this process anticipate any problems with Alcyon Lake?

Mr. DAGGETT. Well, we have known that Alcyon Lake is the off-site, if you will, part of this remedy.

Senator LAUTENBERG. Was that made known to the community and the State that we could expect Alcyon Lake to become a contaminated site as this flushing process began? It is contaminated, is it not?

Mr. DAGGETT. It is contaminated now. We don't anticipate the flushing process itself as inconsistent with the long-term remedy. In fact, we see this flushing process and what we are doing there is going to be consistent with the remedy we ultimately use for the Alcyon Lake itself.

Senator LAUTENBERG. Alcyon Lake when the flushing process began was in what condition?

Mr. DAGGETT. We haven't actually begun the flushing process. We have drained that site once, and a number of chemicals were removed as part of that. I mean, we captured a number of chemicals as part of that, but we haven't actually begun the process. Alcyon Lake was contaminated through the discharge from the landfill.

Senator LAUTENBERG. There is a containment system there now?

Mr. DAGGETT. Yes, and the containment system is not 100 percent, but it wasn't designed to be 100 percent.

Senator LAUTENBERG. Right. It wasn't believed that the containment system was going to permit that kind of leakage.

Mr. DAGGETT. No, I think the containment system is not far from what the predictions were. I don't remember the exact numbers, but the containment system and most containment systems are designed such that they don't stop 100 percent, if you will, of all that material going off. There is some that is going to come through.

Senator LAUTENBERG. Is it usually believed that a containment system installed is going to produce another site nearby?

Mr. DAGGETT. No, but I don't think that is what has happened in this case. I think Alcyon Lake was already contaminated. In fact, Alcyon Lake has been contaminated for some time prior to any kind of containment system put in place.

Maybe I should turn to some of the technical people that I have with me to answer more specifically.

Senator LAUTENBERG. Because I visited down there with the residents, and I——

Mr. DAGGETT. This is John Frisco who is head of the Superfund remedial action branch in New Jersey.

Mr. FRISCO. The question on Alcyon Lake is one that I think we have known for some time that there is contamination there.

Senator LAUTENBERG. In the lake?

Mr. FRISCO. In the lake itself.

Senator LAUTENBERG. There is also off-site contamination behind the landfill as well.

Mr. **Frisco**. Behind the landfill itself. I think it is important to note, though, that in Alcyon Lake, we have found through a first phase of study on the lake that the sediments are contaminated with things that probably came from Lipari and also from fertilizers and pesticides that may have drained down into the lake and then deposited at the bottom. There is also some sewerage sludge in the lake and possibly some electroplating waste, so that there is a problem in the lake, but Lipari was only partly responsible for causing that problem.

Mr. **Daggett**. And not only since the containment was put in place. I mean, the lake was contaminated prior to that.

Senator **Lautenberg**. How about the off-site contamination? Did that result after the containment system was put in there?

Mr. **Frisco**. When the site was first encircled with the slurry wall and cap, we looked at the 6 acres where the actual dumping occurred and then the next 10 most contaminated acres. So, we are now looking at a 16-acre containment system.

There are some areas outside the wall, particularly in the marsh, where the soils are relatively contaminated. It is likely that some action will be needed at that marsh which could include removing of some of the materials, containing them, or somehow treating that material, but there is contamination to some degree outside of the wall.

Senator **Lautenberg**. Has there been a look at any off-site solution of the problem?

Mr. **Daggett**. We are in the middle of the study of the off-site solution, and we will have that completed, I believe, by the end of this calendar year.

Senator **Lautenberg**. But meanwhile we will continue to develop the flushing approach.

Mr. **Daggett**. On the landfill itself, yes, and I expect to sign a record of decision on the off-site portion of it by the end of December, by the end of the calendar year.

Senator **Lautenberg**. We would like to be kept up to date and advised on what takes place there. We are going to continue to look, because this number one designation really tells quite a story about the whole program for getting rid of toxic waste sites in our country.

Chris, I would like to turn to some other questions on the number of sites that are going to be cleaned up. Here we have this chart, you are familiar with all these sites?

Mr. **Daggett**. I am.

Senator **Lautenberg**. I would like to try to be specific. If you could, we will start from the worst site or the one designated worst of all and just try to get some idea of when these will be at an appropriate stage that we think we have been successful.

If you go with Lipari, we have just concluded then we are still going to be in a study mode until the end of this year.

Mr. **Daggett**. Approximately. Well, that is when the design phase will be completed for the landfill portion of the site, and we will start actual cleanup next year.

Senator **Lautenberg**. Do you want to give us a guess as to how you will start it sometime early in 1988? Do you want to give us a guess as to how long it might take?

Mr. FRISCO. The landfill itself or the outside areas?

Senator LAUTENBERG. Well, we have to start someplace. Let's start with the landfill itself.

Mr. FRISCO. We could start construction in terms of actually flushing material sometime next year, 1988, for the landfill itself, and probably have a pretty good idea on how well the flushing system is working sometime in the latter part of 1989.

Senator LAUTENBERG. So, we begin in 1988 and by 1989 we are going to have a very good idea as to how successful that is.

Mr. DAGGETT. Right.

Senator LAUTENBERG. You assure me that flushing continues to be the best method.

Let's look at the next one which is the Helens Kramer landfill site. What is the status of that one right now?

Mr. DAGGETT. On Helen Kramer, we have signed the record of decision, and the selected remedy is under design.

Senator LAUTENBERG. So, when do you think you will get a response from the community on that?

Mr. DAGGETT. What do you mean by a response from the community?

Senator LAUTENBERG. Well, are the citizens in the area here concerned about the decision that is likely to come down? Are they going to have a chance to look at the approach taken?

Mr. DAGGETT. We had a full and open public process that led to the record of decision which I signed on that site. Actually, what was the date of the record of decision?

Mr. FRISCO. I believe it was 1984.

Mr. DAGGETT. It may have been September of 1985.

Senator LAUTENBERG. 1984 is when the ROD came down?

Mr. DAGGETT. The record of decision was in—let's see—I signed it on the 27th of September, 1985.

Senator LAUTENBERG. 1985 we had the ROD. Okay. So, when will the——

Mr. DAGGETT. We should complete the record of decision—I mean, the design of that cleanup by the winter of this year, so the latter part of this calendar year.

Senator LAUTENBERG. So, you are saying 1987.

Mr. DAGGETT. Right. The design will be completed. So we will actually start construction next year.

Senator LAUTENBERG. Construction in 1988.

Mr. DAGGETT. Right.

Senator LAUTENBERG. Let's take the next one, Price's Pit.

Mr. DAGGETT. Price's Pit, the record of decision I signed. We filed a judicial action. We are very near settlement on that for some $17 million after a lengthy negotiation with the responsible parties.

Senator LAUTENBERG. So, at what stage of development is the plan?

Mr. FRISCO. There are actually two pieces to Price's landfill. It is important to note that the first part of it was implemented some years back and involved replacement of the public water supply which was really the health problem associated with Price.

The second part of the problem now involves controlling the source of contamination, and that is, I think, the design that Chris is referring to.

Mr. DAGGETT. That is right. The health problem itself or the potential health problem was addressed already. We——

Senator LAUTENBERG. That is household water and used for drinking.

Mr. DAGGETT. Right. That is a 13 million gallon a day public water supply.

Senator LAUTENBERG. So when will that be, Chris?

Mr. DAGGETT. The water supply has been in already. The design on this—I am not sure. Do you have a timetable, John, on the design?

Mr. FRISCO. The design funds will be obligated within the next 30 to 60 days for Price. It will be a State lead site. They will hire a contractor to then actually do the design work.

Senator LAUTENBERG. Okay. So, the cleanup is off in——

Mr. DAGGETT. Probably a year from then, a year to 18 months following the actual design monies being obligated. So, we are probably looking at the end of calendar 1988 when the design would be completed. So, 1989 would be the construction.

Senator LAUTENBERG. That is to begin the construction.

Mr. DAGGETT. Right.

Senator LAUTENBERG. Okay. Let's take one more, what is happening with CPS now?

Mr. DAGGETT. CPS Madison is a State enforcement lead site, and I think probably the best thing would be to defer to the State and have them address that, if I might.

Senator LAUTENBERG. Gems is in what condition?

Mr. DAGGETT. The Gems landfill, again, the record of decision has been signed on that. I can—John, do you know when the——

Mr. FRISCO. Yes, the design is currently underway for containing the landfill. The State has already implemented the first part of that remedy which involves collecting the landfill gases which tended to be a source of concern to people in the immediate area. So, that first stage has already been initiated.

Mr. DAGGETT. So, some cleanup action is underway already at Gems, and the full design is also underway.

Senator LAUTENBERG. Any feel for when construction on the complete package might be due?

Mr. FRISCO. Probably the latter part of calendar year 1988.

Mr. DAGGETT. So, early 1989 to start action on that. The design will be completed between now and then.

Overall, Senator, on 7 of those 10 sites, we have selected the remedies, and the only ones we have not selected remedies on are CPS Chemical which, as I said, is a State enforcement lead, Shield Alloy Corporation which is your third from the bottom, and Vineland Chemical which is the next to the bottom. Those are the only three where we don't have records of decision.

With Vineland Chemical, we recently took back from the responsible party the remedial investigation portion of it, and we are going to conduct that ourselves. On Shield Alloy, there is also a State court order, and I think the State can address that issue.

Senator LAUTENBERG. Let's take a look at Bridgeport.

Mr. DAGGETT. On Bridgeport, I signed that record of decision on—I am not sure of the date. The remedial action is actually underway at that site. We are taking down the tanks, cutting them up, and disposing of them.

Mr. FRISCO. The contractor is currently on site beginning the effort of removing of the 90-some odd tanks and contents of those tanks at a cost in the area of $8 million. The lagoon part of the problem which is really the massive piece of that site——

Senator LAUTENBERG. How big is that lagoon?

Mr. FRISCO. The lagoon is about 12 acres and contains somewhere between 50 and 70 million gallons of contaminated liquid containing oil with PCBs and some sludge material. The design for that what we think will be an on-site incinerator should be completed this fall. We will be able to be begin to obligate final construction dollars, hopefully, some time this fall.

That is estimated to cost a total of $77 million at this point.

Senator LAUTENBERG. When might we be looking at the initiation of the remedial action itself?

Mr. DAGGETT. That is occurring with respect to the tanks and cutting them up, but with respect to the lagoon itself, probably——

Senator LAUTENBERG. That incinerator comes in fairly quickly, or does it?

Mr. DAGGETT. I would love to think of something coming in fairly quickly, Senator.

Mr. FRISCO. There are mobile incinerators around which tend to be relatively small in capacity.

Mr. DAGGETT. That is the problem.

Mr. FRISCO. Now, we are looking at a massive problem out here, and with the size of the incinerators currently available, you would be looking at probably a two to three year operation at the site.

Senator LAUTENBERG. So, the major remedial portion of this is probably——

Mr. DAGGETT. 1989 probably. By the time you start getting actually able to burn or incinerate some of that material, it is going to be mid to late 1989 is my guess. Maybe a little earlier. I am going to press John and hold him to it now.

Senator LAUTENBERG. All right. How about Lone Pine and Burnt Fly?

Mr. DAGGETT. On Burnt Fly, the record of decision was signed actually before I came on board. It was signed in November of 1983.

As you heard from Barbara Vecchiarelli, there have been a number of concerns with the problem. It is also wrapped up in the issue of the off-site disposal policy.

I believe it is a State lead site, right?

Mr. FRISCO. Yes.

Mr. DAGGETT. Maybe, again, I can defer to the State and have them address the cleanup.

On Lone Pine landfill, the record of decision again has been signed on that. Let me get the details.

Mr. FRISCO. It was one of the last sites that I think Lee Thomas signed the record of decision for. It involved building a containment system to contain the materials inside the landfill including a groundwater extraction system to create sort of a hydraulic barrier.

Mr. DAGGETT. This site highlights one of the other problems we are having, of course, and that is with publicly owned treatment works accepting waste water flow from a Superfund site. Despite the fact that we have a program that will successfully pre treat those wastes, if you will, before putting them into the publicly owned treatment system, there has been a great deal of hesitation on the part of the Ocean County Utilities Authority.

We have tried to negotiate with them, and with the conditions that they want to attach to the permit. Frankly, it looks like it is going to be cheaper to actually build an entire new facility at that site to treat this waste which is, in many respects, probably somewhat questionable with respect to efficiency of dollars spent, but we have a real problem with that, particularly over the fact that, as you know, the indemnification of POTWs was left out of Superfund.

I think if there was one area that we could really use some assistance on, it would be in that area to somehow indemnify them for any kind of help that they give us.

Lone Pine is just literally held up by trying to resolve this dispute over how to get rid of——

Senator LAUTENBERG. How the public water——

Mr. DAGGETT. Exactly.

Senator LAUTENBERG. So, we could be looking at a couple of years before——

Mr. DAGGETT. No, we expect to start construction in the early part of next calendar year, early in 1988.

Senator LAUTENBERG. What we see is a process not only complicated but also terribly slow in terms of bringing all the parts together that we can and, therefore, just places an additional burden on EPA and the agencies involved.

Mr. DAGGETT. There is no question that these sites do not move as fast as anybody wants them to, and particularly the people who live next door to them. I mean, I don't want to pretend that we move quickly on these sites. It is a long, slow process, but basically we want to do it right. I suppose to take advantage of New York at the moment, we don't want to build a bridge that falls into the river somehow in the end.

Senator LAUTENBERG. Right, but some of these things have been under study for several years.

Mr. DAGGETT. No question about it.

Senator LAUTENBERG. Serious study.

Mr. DAGGETT. That is correct, but let me say with respect to the targets the Congress has set, as you know, the different goals that we have for site investigations and preliminary assessments and so on—the only goal we expect not to meet is, potentially at the moment, the site inspections which we, as you know and you have heard from the State prior to this hearing, may have some difficulty getting done, but we expect to work closely with the State and try to develop a plan that in fact meets that goal.

But we expect to meet it on preliminary assessments, on the Rifs starts, and on the remedial action starts. So, we expect to be able to reach those goals, but they are going to be long-term cleanups, no question about it.

Senator LAUTENBERG. Obviously, we have a much better shot at getting the inspections done than we have at sending out a message of confidence to the people in these areas that these sites are really underway to be cleaned up.

Mr. DAGGETT. Well, not be underway. I thought you were going to say to send a message that they are actually cleaned up. But in terms of starting, I think—I am confident we can meet that goal.

Senator LAUTENBERG. The definition of a start is one that is still unclear. I mean, if there is the earliest investigation, that counts as a start. We tried to get into the law dates for cleanup, and we were unsuccessful.

Mr. DAGGETT. I am saying that we will meet the goals for the starts meaning the study phase, but we will also meet the goal for the starts for the actual cleanups themselves. We anticipate being able to meet those goals that are set by Congress.

Senator LAUTENBERG. For a moment, I want to turn to the technical assistance grants. I worked hard to get that into Superfund for reasons that you have known and you have heard reinforced today.

The program is not up and running because EPA hasn't yet issued the necessary regulations. Now, I understand that those regulations won't be out until late fall. Is that correct?

Mr. DAGGETT. As I indicated in my testimony, we expect that the advance notice of proposed rulemaking will be out some time in the next month or so followed by the extensive public comment we expect to get, and then followed by a final rulemaking in the fall. Yes, and then we will be able to administer the grants after that.

Senator LAUTENBERG. Obviously, that would be then close to a year after the Superfund was enacted.

Mr. DAGGETT. That is correct.

Senator LAUTENBERG. The Superfund work, nevertheless, goes on regardless of that. The citizens, however, can't get their grants at a timely moment to comment on the programs that are either designed or initiated.

Is there a way to get around this so that the grants are better timed with the initiation of studies?

Mr. DAGGETT. To some degree yes, and to some degree no. In terms of final rulemaking, as I indicated in the testimony, there are some pretty complex questions I think and difficult questions that we have to address, some of which, frankly, involved the whole problem of just giving out Federal money. As you know, there are a number of paperwork activities that have to go on for a community, and we have to get those all in the proper order and get communities to understand the kind of structures they have to have in place to be able to receive these funds and to then disperse those funds.

But we are moving ahead, as you know, in a couple of areas. One is for Lipari. We were able to, on a demonstration basis, under CERCLA actually—it was not under SARA—to be able to provide a $50,000 grant to them. We are in the final stages now of working with them on the final work plan and trying to get it in proper order so that we can actually give the $50,000 to them.

In addition to that, we have negotiated with responsible parties for a site in Puerto Rico with Revlon which is cleaning up a site there. They have agreed to give $50,000 to people as a technical assistance grant because we weren't able to get it to them because of the rulemaking that we are going through.

In addition, we are in the middle of negotiations now with Ciba-Geigy in Tom's River to hope to try to reach an agreement with them on a technical assistance grant.

One other point, if I may. One of the things I recognize as a difficulty quite aside from the technical assistance grants is the amount of time people have to look over these materials in the first place. We get out an RI/FS, as you know. We normally have 60 days of comment, 30 or 60 days of comment. We extend it if it is requested. But I have been working—and at some point I don't know if you have them coming up—but with some people actually around the Ciba-Geigy site the issue came up if we can give the RI/FS to people as it comes in in draft form to the agency. In other words, before the agency gives it out, we get it from a contractor, and we go back and forth with the contractor a number of times.

We are trying to work out an arrangement whereby we can develop a means to let the public see this information earlier. But one of the difficulties we have with that, as I have explained to several people who are working with me on it from environmental groups, sometimes those RI/FSs, come in and we are not at all happy with them. And we send them back to the contractor and we want additional work done.

One of the things that I want to be cautious about is that it isn't seen that if we release that information that EPA is endorsing this report somehow, and, frankly, it is a very difficult issue to get the public to understand that if we give it out we are not endorsing it.

So, I am trying to develop a way that is short of the actual technical assistance grant right now so that we can at least provide even more access yet for the public on these reports as they become available.

Senator LAUTENBERG. If we could get an interim rule, perhaps, modified later, because the exceptional cases you have to deal with. You can't be inviting comment at too early a stage. On the other hand, too late is perhaps even worse.

So, if it were possible for EPA to get these moneys out into the hands of those who are serious, review by the community could take place at an earlier stage, I think it would be an excellent idea and I would urge you to take that back.

Mr. DAGGETT. I will take that back. I have to be honest that I don't hold out a lot of hope for that, but, as I said, we are in the stage now where we are just about to go out and ask, based on a tentative regulation that we are proposing, to get public comment on that. I am not sure we get there any more quickly, frankly.

Senator LAUTENBERG. Well, it leaves us 6 months from a final determination.

Mr. DAGGETT. That is right. We are about 6 months away.

Senator LAUTENBERG. I want to just touch on some of the instances where DEP takes the lead for Superfund activities. This is referred to as the cooperative agreement between the agencies.

Mr. DAGGETT. Right.

Senator LAUTENBERG. Between New Jersey and EPA. A recent report from EPA's IG discussed such agreements and criticized the Department of Environmental Protection for delays in completing the initial cleanup studies, the remedial, the RI/FS. These delays, according to that report, can slow down cleanups.

Mr. DAGGETT. That is correct.

Senator LAUTENBERG. Region II followed up. On March 31, you wrote to the DEP recommending changes.

Mr. DAGGETT. Yes, I did.

Senator LAUTENBERG. The Region II response suggested the DEP workload and contract practices could be a factor. Can you just expand on that a little?

Mr. DAGGETT. I think I will have—with me on my left is Steve Luftig who is the head of our Superfund program. I think I will have him address that more completely.

But let me just say, as I indicated in my testimony, the DEP has been very aggressively working on these issues, and I think it is addressing all of them, but I will have Steve go into some of the more——

Mr. LUFTIG. We saw these recommendations that the IG made to EPA as some minor changes in our on-going relationship with the State, some ways things could improve a bit. It seemed to us the State had already taken some major steps to speed up their procurement process to avoid contractor procurement delaying the start of studies.

When we wrote back to the State of New Jersey, we identified a few other ways that things could be improved a little more, and that is what you are referring to.

Senator LAUTENBERG. Such as what kinds of things? This is not designed for finger pointing, we want to move the process along. Wherever the problem lies, we want to correct it. So, if you would so that we have a clear idea.

Mr. LUFTIG. Okay. We wrote that more close monitoring of critical milestones and time frames from pre-award through post-award of the contract would help. All that says is if you hire a contractor to put windows in your house, keep as close a watch on him as possible.

"Use the recently developed grant status monitoring system," we wrote, "to monitor target and actual dates." All we were saying there is let's keep track of the dates we set and how we are doing in meeting them.

We suggested that the State evaluate the project workload assigned to site managers. We compared it to our project workload, and it seemed that some project managers in the State had more projects than our project managers did. Perhaps that was a way of speeding things along.

We made other minor recommendations such as improving the files that site managers keep, that the State report progress to EPA a little more frequently since we share the burden in site studies but the funds are 90 percent Federal, so we just were asking that more quarterly project status reports be submitted.

Those were the recommendations in the March 31 letter.

Senator LAUTENBERG. Isn't EPA's RI/FS process quicker than DEP's by about 6 months?

Mr. LUFTIG. That could be. On average, we are taking sometimes as long as two years to complete an RI/FS and sometimes even a bit longer, as you have shown from some of your examples. Every site is unique, and we approach it, as we did at Burnt Fly Bog, we find things we didn't expect. We find more PCBs than we thought were there.

So, each site being unique seems to have its own life. I would say that on the simple sites, the State is now able to approach them and study them as quickly as we can. On the more complex sites, we all take too long.

Senator LAUTENBERG. What do you think accounts for the time difference? We will give the DEP a chance to respond to this as well.

Mr. DAGGETT. I think it may be somewhat the contracting process that John—do you want to address that?

Mr. FRISCO. Yes. EPA has developed a national contracting system. We have what we call zone or remedial contractors literally on board already. It is very easy for us to start an RI/FS. We can simply ask Chris to obligate some money and issue a work assignment and the contractor goes, literally cutting procurement to zero.

The State has a pre-qualified list which shortens the time frame a little bit. They go to three firms, and they ask each firm for a proposal. They evaluate those proposals and ultimately pick one.

Anything other than the system we have is going to take additional time. The State prefers their method because they feel it promotes more price competition than the Federal contracting process, we may pay a little bit more. For possibly a little bit more money, though I think, we can complete studies in faster time frames. We can very quickly respond to situations that we didn't expect.

Senator LAUTENBERG. Don't you take competitive pricing into consideration when you——

Mr. FRISCO. When the original contracts were awarded, they were taken into consideration on a national basis.

Mr. DAGGETT. I think the sum of it is there are strengths and weaknesses in both systems. On the one, we may be able to act a little more quickly with one contractor, but the State, then, while it might not be as quick in some cases, they do get a broader range of proposals and a little more price competition there.

So, we keep trying to work on that system and improve it, but I really think—and I think the State can speak better for itself—but there really are some strengths to their approach as opposed to ours.

Senator LAUTENBERG. I wonder if it is not possible to maintain a good competitive pricing system, because I believe that is ultimately the best way you get things. However, each one of us in our professional lives has seen times when a particular expertise is required or a particular time frame is required that you put aside some of the competitive factors.

But isn't it possible to develop a profile of contractors on particular approaches to remedy that could at least establish the fact that this contractor is reliable, is price conscious, has the ability to deliver a product. Because the time on these things, as we have seen, is frustratingly slow, and it is for you people as well as it is for me, but it is more frustrating for the people in the community who feel threatened.

Mr. LUFTIG. If I could follow up on a point Chris made during his testimony, one of the things that Wynn Porter when he came on board specifically looked at is—Wynn Porter is the Assistant Administrator for the Superfund program—He came from a consulting background. He saw very quickly that one of the things that tended to cause delays in some of the work we do is that we have a contractor doing a study. We then go through another contracting process, possibly using the Corps of Engineers to do the design, and then yet a third contractor would ultimately be picked for a remedial action.

Whenever a contractor is called upon to do something, there always seems to be some hesitancy to fully accept the work that had been done before. They all would like to go out and do a little bit more work just to sort of confirm some of the past results.

This hand-off, handing the baton off from contractor to contractor has caused, I think, part of those delays.

One of the things that EPA is exploring now is what we call our mini-REM contracts which will actually be contracts that the region picks as opposed to the national one that is done at headquarters. This contractor will carry a project from the study phase through the design and ultimately through construction.

This contracting approach also might help in some of the price competition that we may not necessarily have in our zone contracting approach. So, we are aware of the problems with getting contractors in and out and trying to find faster ways to do this, and we are trying to address those in what we think will be a very productive way.

Senator LAUTENBERG. So, you are studying ways of making sure that the competition is as vigorous as it can be without time delay.

Mr. LUFTIG. Exactly.

Senator LAUTENBERG. The March 31 letter to DEP pointed out the Inspector General's findings on other issues. You agreed with them. Can you summarize these other issues along with requests that Region II made to DEP, and will Region II be monitoring to assure that these recommendations are being followed?

Mr. LUFTIG. The IG's audit recommendations included these. They said to EPA, "We recommend that you instruct the DEP to consider utilizing prime contracts similar to EPA procedures to conduct RI/FSs." We think that the State has taken a number of roads to streamline that procurement process and to look into getting a short list of contractors that they could use for studies.

We don't know that we can instruct them to use a prime contractor but rather as we are doing to try to identify a group of contractors so that the procurement process can remain competitive and be done more quickly.

The IG recommended that "requests for time extensions for project funding be submitted sufficiently prior to the agreement completion date to allow for adequate review by your staff," by EPA staff. What that refers to is the State perhaps taking time in the past to get a contractor on board and needing more time in a cooperative agreement and requesting that a time extension be granted. We think that the past problems the IG identified have been corrected and that time extension requests are submitted in a more expeditious manner.

Do you want me to go through each of the IG's audit recommendations?

Senator LAUTENBERG. No, I would appreciate it if you would submit them for the record, just so we have it.

I want to discuss for a moment the Superfund budget. Mr. Daggett, I believe that the Administration's national Superfund budget is inadequate for each of 1987, the current year, and prospectively for 1988. That budget assumes that as much as $300 million that Congress appropriated in 1987 would not be spent, could not be spent.

Didn't Region II initially request more 1987 funding from EPA headquarters than it received?

Mr. DAGGETT. Yes. We did request a little more money than we actually received.

Senator LAUTENBERG. How much?

Mr. FRISCO. Well, when we put our initial request together, we initially thought we could start some additional construction projects; namely, Lone Pine and Bridgeport, and we looked at full funding for those projects which, in the case of Bridgeport, was $77 million and, in the case of Lone Pine, was $15 million.

So, it was approximately by that much more that the initial request was based.

Mr. DAGGETT. But we have been able—explain, if you will, where we are in Bridgeport that we have been able to get $24 million of that in the program.

Mr. FRISCO. I think for both Lone Pine and Bridgeport there were very valid reasons why there was some concern whether in fact all of that money could be spent in fiscal year 1987. At Lone Pine, we still had an on-going problem with the Ocean County utilities authority about accepting pretreated leachate, literally holding that design up, so we did not feel that under any circumstances we would be able to obligate construction dollars this fiscal year.

In the case of Bridgeport, and Bridgeport is a very important issue, because it was hoped that we would have gotten the proper language in the law that would have allowed us to phase-fund some of these projects. The Rivers and Harbors Act which the Corps administers has built in authorization that allows the Corps to enter into contractual arrangements and then, simply based on appropriations it receives each year, continue work at sites.

We had hoped that the legislation which we now have under Superfund would have provided that specific authority. In fact, it doesn't, and we are still trying to work around this phased funding issue.

The way we worked it out on Bridgeport was simply to segment a portion of the total work needed to be done. That portion involves transporting the incinerator to the site, mobilization, and testing to make sure that it is operating efficiently. For that, we do have $24 million in our 1987 budget which is all we need.

In fiscal year 1988, without a phased funding provision which would be subject to annual appropriations, we will have to obligate the balance of the $77 million which is $53 million more.

Senator LAUTENBERG. I understood you would not have advanced the case had you had that money. Is that what I hear you saying? I have got to understand why you would have requested it in the first place.

Mr. DAGGETT. The point is that for all projects that are ready to go in New Jersey, we feel we have the money in this fiscal year.

Senator LAUTENBERG. So you just asked for it as a negotiating stance?

Mr. DAGGETT. We asked for more, as John indicated, and then the two projects, in particular, are not quite at the ready to go stage. I think, frankly, from our perspective at least within the region, it makes sense to put the money that is necessary for the fiscal year and not necessarily be using money for the next fiscal year, if you will.

It is hard for me to frankly address the national question as much, because I am not as familiar with it on an overall basis.

Senator LAUTENBERG. The thing that happens is there is so much competition for these funds. If we need annual appropriations to keep going, I get worried that we could find ourselves in 1991 about half way through. It wouldn't take much to leave us with that much to go on many of these projects and then having to fight the whole battle of Superfund and reauthorization and appropriations.

I can tell you this. My fight with EPA and OMB is to make certain that whatever monies can be—no one wants to throw money away here. Not me, for sure. But I don't want to have decisions made that were contrary to the legislative initiative that was taken and labored over for a year and half, roughly, before we got reauthorized and then find out that there is an end run around us with OMB carrying the ball and finding out that even though we struggled for it, we designed a tax system, a funding system for it, that we haven't either done the job or don't have the money secure.

Is Region II currently asking for any kind of a supplemental for the fourth quarter of 1987?

Mr. LUFTIG. We think we have enough money to start every project that we wanted to start. We are asking our headquarters office for additional funds for some of those projects. We will be given a budget that will start by partially funding some of the studies. Of course, we would like to more fully fund some of those new study starts.

We will be able to start each study and, yes, we could use a few more dollars in that regard.

Senator LAUTENBERG. So that we can use more funding, and it wasn't that someone came along and convinced you with your experience—and I have great respect for the professionals who manage EPA—that it wasn't necessary to bank that much for the work that was on hand.

Mr. LUFTIG. We were able to economize between the request and the actual budget. We found ways of doing it so that no project would be impacted, and that to us was the most important thing.

Senator LAUTENBERG. How about the long term? These are very complicated efforts. You need all kinds of skills and talents and experience, much of which isn't readily available. Don't you have to fill up the reservoir of talent and ability necessary in order—I have had this same argument with Lee Thomas in terms of getting contractors to believe that there is an opportunity for them to do some work and for them to be encouraged to make investments.

They have to see the funding readily available. There has been people go out of business while waiting; that has happened.

Do we need more money currently or don't we, because if we don't, I am the last one who is going to push it. The newspaper report last week indicated that a total of $73 million Superfund dollars were headed to New Jersey for 1987. I have heard the actual figures are more like $82.

Mr. **DAGGETT**. $83 or $84. It is going to be in that range.

Senator **LAUTENBERG**. $84 million?

Mr. **DAGGETT**. Yes.

Senator **LAUTENBERG**. I think that we have done what we wanted to in terms of a chance to review some of the issues with you. We are grateful.

I thank you and your colleagues for joining us today.

We will take a 5-minute break, and then we will hear from Commissioner Dewling.

[Recess taken.]

Senator **LAUTENBERG**. I want to welcome the Commissioner of the Department of Environmental Protection for the State of New Jersey, Commissioner Dewling, whose work on behalf of a better environment is noteworthy. Certainly New Jersey, in the presence of Mr. Dewling's expertise and knowledge, has a lead position among States in terms of its concerns about the environment.

Part of that, I guess, is because we have so many places of concern. The other is that we have a Commissioner who is hard at work in trying to solve the problems, and we respect and appreciate that.

Commissioner Dewling, as we have with the other witnesses, we would to ask you to submit to an oath.

Mr. **DEWLING**. I also have Assistant Commissioner John Gaston.

Senator **LAUTENBERG**. Okay, we will ask Assistant Commissioner Gaston also to make sure he is telling the truth.

[Witnesses sworn.]

Senator **LAUTENBERG**. Commissioner, if you would, please proceed with your testimony.

Mr. **DEWLING**. Last time I said I do, I sometimes think that maybe I regretted it.

Senator **LAUTENBERG**. You wife may. I am not sure.

Mr. **DEWLING**. No, it's been a wonderful 30 years.

STATEMENT OF RICHARD DEWLING, COMMISSIONER, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, ACCOMPANIED BY JOHN GASTON, ASSISTANT COMMISSIONER

Mr. **DEWLING**. Let me just thank you up front for your personal involvement in the State and your aggressiveness in addressing some of the hazardous waste problems that we have as well as some of the newer problems on floatables with plastics and also for your national leadership role in trying to deal with some of these problems.

I think, very honestly, when we are talking about the problems with Superfund, I think back in 1980, there was false expectation that this problem was going to be solved overnight. And I can remember sitting in a meeting in Washington with, at that time, the

Administrator of EPA, and indicating that this program you have signed on for 15 to 20 years total commitment. I think there were expectations at that time that it was a one-shot deal and it would be over with.

I think the public, the scientists, and everyone else had an expectation that really couldn't be delivered. I think we are now facing the reality that the Superfund program is here to stay. It is something that we have to deal with properly and in a timely fashion, and I think we share the same frustrations that the public shares, the lack of confidence in the decision making process, and, very honestly, what I am about to tell you today probably is not going to make you feel any better, because, in summary, the new SARA amendments are basically going to take longer, they are going to cost more, but hopefully they will produce a much better solution than we have had before.

I would like to submit to you for the record, rather than going in a detailed record of every site, where we are, and how we are coming, as well as my full testimony. I will just abbreviate some of those issues, but this information provides you the latest update on where we are on all the sites, the status of each RIFS, the designs, and the construction phases.

Let me just go over why implementing SARA will take longer. First, remedial process delays will result because the RIFS phase will change significantly as a result of SARA. The basic underlying shift in SARA is the reversal from requiring proven technology for cleanup to encouraging the use of new and emerging or innovative cleanup methods that will hopefully achieve permanent solutions, remedies that will reduce the volume, remedies that will reduce toxicity or mobility of the hazardous materials.

If I look at why it is going to be longer, you have to do treatability studies now. Previously, treatability studies were optional during the RIFS phase. However, in order to determine which new technology is appropriate, treatability studies will now undoubtedly be an integral part of almost every RIFS.

Remember in the early stages of Superfund, RIFS were taking 6 months. As you heard EPA now indicate, RIFS now is taking up to 2 years.

If we start putting treatability studies in there which were normally done in the design phase, you are extending the time up for that.

The cleanup standards—SARA requires that the proposed remedy meet or exceed all applicable, relevant, and appropriate requirements of all Federal and State environmental laws and regulations. This provision of SARA reinforces the need for treatability studies prior to the selection of the remedy to assure that each new technology will achieve these acceptable standards.

The use of new technologies may require a pilot study in the design phase, again a delay. Mobile treatment units or on-site construction of the new technology remedies may also be necessary and would be expected to affect the duration of the remedial action phase. Hopefully, that should reduce the long-term operation and maintenance phase.

Obviously, SARA will cost more to implement. The cost of the remediation process will also significantly increase. The intent of

Congress was to reduce overall the long-term cost of remedial action by reinforcing the land disposal restrictions in RCRA and preventing what Congress described as the shell game by simply moving material from one site to another.

RIFS delays caused by technology evaluations and ARAR mandates will result in an overall increase in the cost of remedial actions. Consequently, the State's share will increase.

However, through your good offices, you took the lead on this in making sure that the long-term O&M which we now call treatment, the long-term costs associated with that where the State was originally getting hit for 90 percent of that—actually 100 percent of that after a year—now it is a 90/10 split. That goes a long way to improving and reducing the cost to the State.

There are many new requirements of SARA that are expected to significantly impact the previously design period that we had. The impacts of this have thus far been seen in the State program.

Of the 28 originally scheduled to start in fiscal year 87, it is expected that, at most, 14 will be initiated. Constant interaction with EPA in assisting us in defining the full impact of SARA is extremely important to us.

SARA will also cause scheduling uncertainties. The time delays associated with the ARAR mandates and technology evaluations will directly affect scheduling of remedial activities.

The best example I can give you of that is the Lipari landfill now. You are asking for new technology. You have to make assessments. It takes a longer time to make the firm decision.

In addition, because the duration of these technology evaluations and treatability studies that is currently unclear, our ability to plan future activities and funding needs is severely impacted. In October of 1986, New Jersey developed a 5-year, $1.6 billion plan for the remediation of its hazardous waste program through fiscal year 1991.

I might mention that this past year, last calendar year, under ECRA cleanups, the State received a guaranteed private utilization of funds for $242 million. This is a prevention program to prevent this type of activity. These were financial assurances that private sector money will be used, and that is not part of the $1.6 billion.

While we went through this program, our projections for the RIFS phase, the design phase, and the construction phases, we assumed that the remedial process would take between 5 and 6 years to complete. These projections will need to be extended to incorporate the additional work anticipated.

It is estimated that completion of the remedial process implemented under SARA will now take anywhere between 6 to 10 years.

When I first became Commissioner, I indicated that by the end of 1989, I had hoped that we would have cleaned up—cleanup to me means the feasibility study is done, the design is done, and all the bricks and mortar in place, and the construction is done, and you are now treating the groundwater to some final end point which may take another 10 to 15 years. I projected that we would have 15 to 20 sites cleaned up by the end of calendar year 1989.

I am now readjusting that and saying I hope to have 5 to 9 sites cleaned up.

Of all the sites that you have listed on your list right there, there is only one site that I am projecting by 1989, end of calendar year 1989, will be "cleaned up" to the point that I just described, and that question is the Lapari landfill. All the others will go beyond 1989.

There are Federal funding issues. As increased costs and time delays affect the State's remedial action planning process, uncertainties emerge with regard to funding of remedial activities and the role of the Federal funding becomes even more critical. We see several problems looming on the horizon with respect to availability of Federal funding to finance a very costly program in a timely manner.

Of primary concern is the provision under section 104(c) which outlines conditions under which States are entitled to reimbursement or credit for funds expended for sites on the NPL. A review of this provision in the EPA working group documents on the revision suggests that in the absence of a cooperative agreement, EPA has arbitrarily limited credit for expenditures to after the date of the enactment of SARA and restricted it to remedial actions only.

For New Jersey, a State endowed with funds of its own and an ability to act earlier than EPA, it is imperative the State be allowed to initiate remedial planning activities at any time and be able to obtain either State credit or reimbursement when EPA is ready to act. We cannot wait to list a site on the NPL and then enter into a cooperative agreement to ensure that the State receive its eligible funding from CERCLA.

This agency interpretation is contrary, in my view, to the original spirit of SARA. Remediate now when costs are lower and the environmental impact can be minimized.

We recognize that EPA would require pre-approval of the expenditures, but New Jersey must be allowed at least the opportunity for credit for remedial planning activities. We have made the commitment to move aggressively, and we would like to continue that activity.

Let's look at the problem of another activity of the elimination of Federal reimbursement for monitoring as part of the operation and maintenance. At the Krysowaty site, we will be spending over a 5-year period almost half a million dollars for monitoring. Right now, that activity is saying that that is not a reimbursable expenditure.

Phased funding—the U.S. Army Corps of Engineers has indicated that it cannot statutorily proceed with a project unless it has funds for the total project. This means that a multi-year project which could cost $100 million would have to be funded up front.

This situation multiplied only by a few times would tie up the total Superfund budget, whereas if multiple year projects could be phase funded, either work could be accomplished and/or less monies could be obligated. The Corps can phase fund its other civil works projects, every project we do, the inlet projects, the dredging projects. They phase fund those.

So, it has the capability to accommodate phased funding. It must apparently only be given a clear authority by Congress under SARA to enable this process to proceed.

Speaking for some other States, the core program of management assistance—Federal funding support of the administration of

Superfund has been unsatisfactory. EPA is beginning to institute a Superfund core program, and that funding is to support the elements within a State to operate a Superfund program. Their main intention is to start Superfund programs in States where such programs do not exist.

The average grant is expected to be $250,000 per State with not much variance from that figure. The intentions are good, but this amount does not approach the level of support that many States need for the Superfund program. In fact, our need in New Jersey, what we are spending now, is roughly $10 million.

To some extent, New Jersey is being penalized for having a large, aggressive remedial program. Support should be provided in an equitable fashion so that States with no programs receive the funding necessary to start them, and States like New Jersey receive the Federal support necessary either at the present time or in the future to continue their aggressive programs.

EPA is also instituting management assistance grants for State administration costs on Federal lead projects. This is a major step forward in ensuring that New Jersey receive compensation for the necessary costs of the State expenditures on Federal lead projects.

It is still too early to determine whether or not New Jersey will receive adequate assistance to cover our administrative costs. However, we are moving in the right direction.

Let's deal with some of the statutory matters concerning site inspections. SARA requires that preliminary assessments, PAs, be performed at all sites by 1988 and that SI, site investigations, be performed on the list by January 1, 1989. New Jersey will meet the 1988 mandate for preliminary assessments, and may be the only State to do so by completing over 1200 PAs approximately 3 months prior to the deadline.

The site investigation mandate presents another problem, and I think you have alluded to that before. After 5 years of Superfund, New Jersey, in cooperation with EPA Region II, has completed a significant number of SIs. However, our current figures show that approximately 820 site investigations are yet to be completed by the January 1, 1989 deadline.

Our estimates indicate that in order to complete this commitment, a manpower increase of 25 to 30 full-time employees would be required. Further, this work would require the analytical laboratory capacity in excess of 8000 samples, assuming 10 samples per site.

The cost of these endeavors is estimated at $20 million just for New Jersey alone. If it is the intent of Congress to have this mandate achieved, then money would have to start flowing now on that particular portion. Even if the money were immediately available, laboratory capacity would be the limiting factor in determining the number of SIs that could be completed.

This mandate would obviously overwhelm the EPA contract lab program, given the commitment to the other States.

Obviously, the statutory SI mandate requires that a clearly defined strategy be established now if there is any possibility that the mandate is to be met. Compliance will also be costly.

Let's look at some of the CERCLA/RCRA issues. Obviously, I think it is the intent of SARA and RCRA to be administered harmoniously together. SARA mandates that waste resulting from actions taken under CERCLA be disposed of at RCRA and TOSCA facilities. The definition of a CERCLA waste has been interpreted to date to include both hazardous and non-hazardous waste as defined by RCRA.

This means that waste considered to be non-hazardous must be disposed of at a hazardous waste facility. The bottom line I am saying here is if we have an NPL site and we have waste on that site that is not hazardous and the State is willing to identify it as not hazardous, it still must go to a hazardous waste site.

The incremental cost is absolutely astronomical. If I had this cup at an NPL site, it is hazardous waste. This cup must be disposed of at a site either in Ohio or up in Buffalo. New Jersey is willing to dispose of this cup at its own landfill. Hopefully, we will have some landfills.

The issue here is that the off-site policy presently established under CERCLA and SARA, although theoretically reasonable, has proven to be largely inoperable. The policy has halted many cleanups already in progress and prevented the initiation of others. The policy has substantially increased expenditures for cleanup by establishing requirements that are well beyond what is appropriate and prudent using sound environmental practices.

There is one other additional problem and potential operational solution to the off-site disposal policy. There is no national system to identify acceptable disposal facilities. Facilities move in and out of compliance from month to month without anyone knowing about it.

We are about to issue the contract on Burnt Fly Bog within the next two weeks for cleanup. The contract has been awarded to a certain receiver. If that company comes out of compliance, we have to readvertise the bid. We lose all that time because we can't be assured of one facility being in compliance.

Also what we are talking about, if a component of that facility is out of compliance, the whole facility is out of compliance. So, if there were some component that we had waste to go to some acceptable facility, if there is one unit in that whole facility out of compliance, the whole facility is out of compliance, and we can't ship waste to that site.

Senator LAUTENBERG. Richard, how much longer will your statement be?

Mr. DEWLING. I am just about finished.

Senator LAUTENBERG. Okay.

Mr. DEWLING. The other issue on POTWs which was the publicly operated treatment works, again, that is a major problem where waste water treatment plants will not receive the waste from the operation and cleanup because of the liability issue.

While we are here at this particular facility here today, I think it is important to recognize that section 209 and 311 of SARA require the establishment of hazardous waste research centers for the research and development of new innovative technology. However, SARA fails to exempt these academic research centers from the extensive permitting requirements mandated by the Resource Conservation and Recovery Act.

So, with that in mind, I would be happy to answer any questions you may have dealing with the State's program.

Senator LAUTENBERG. We appreciate it, and I obviously am interested in what you have to say. I just didn't want to be unfair to the other witnesses when we limited their time for presentation. But I think that everybody had a chance to cover the ground that they wanted to.

I want to ask you some questions. Before that, I want to make certain that it is clearly understood that the dates that we put up on the board refer to the initiation of cleanup projects, and these are approximations, and when we put up 1989, it could be January of 1989 or December of 1989 which makes a big difference. But these are simply a statement as we understood it from EPA as to what they believe the timetable will be.

Obviously, we were pleased to have your enthusiastic endorsement of SARA as we heard it enumerated here. I found it hard, Commissioner, to find much that you thought was worthwhile in that bill. The fact that there was more funding, the fact that there were more specific objectives, the fact that the community was going to be engaged, those things were all subordinated to the fact that you thought it would take longer and be tougher.

There isn't much of redeeming value that I heard from you. You talked about the fact that New Jersey might be getting less than other States on a proportional basis. On the other hand, if we had less money, New Jersey might do better on a proportional basis and wind up with a heck of a lot less altogether.

Because we have taken some initiatives here, it doesn't penalize us. The job is enormous, and if we look at the results of New Jersey's activity or any State's activity, what particularly are our own?

1980 is when CERCLA began. I would still like someone to point out to me which of the sites in New Jersey out of the 100 that we own is cleaned up. Do you have any that come to mind?

Mr. DEWLING. Yes.

Senator LAUTENBERG. Which?

Mr. DEWLING. Krysowaty farm and Freehold project.

Senator LAUTENBERG. Is cleaned up——

Mr. DEWLING. It has to go through a process of delisting, but for all practical purposes, they are cleaned up.

Senator LAUTENBERG. Is the Krysowaty farm on there?

COMMITTEE STAFF MEMBER. No.

Senator LAUTENBERG. How about any of the top ten? How about the number one site of Burnt Fly or any of those?

Mr. DEWLING. As I said, all those on that list there I can tell you exactly what has been done at what landfill and what dollars we have spent on the design and construction phase, but when I am defining cleanup, I am saying to you that none of those sites on there will be "in that phase of cleanup where we are treating the groundwater."

In other words, for Burnt Fly Bog, we are going to award the contract in the next couple of weeks for the construction phase, but now you have the off-site problem and the Wesley Wetlands. Now you have to go through a study phase on that. By the time all that is completed, you are beyond 1989.

Senator **Lautenberg**. If we had less to do with, less resources and less stringent requirements, you think we would have been further along.

Mr. **Dewling**. No. I don't want you to—I mean, you had asked us to comment on some of the aspects of Superfund where some of the enhancements could be provided in terms of speeding up the process. There is no question that what has been done in providing the new Superfund amendments has been a herculean effort and very well accepted and very well done by the legislature and by the Congress and by the Senate.

What we are trying to do is to provide you information as to why these things are taking so long. And the reasons why they are taking so long are what I have enumerated.

In no way, shape, or form was I criticizing the positive aspects of Superfund. I was trying to address the specific questions you are trying to focus on.

Senator **Lautenberg**. Okay. So, it is not the law that is at fault. Rather, it is the comprehension of how difficult some of these problems are, the scope and the magnitude of the cleanup effort highlighted by a law that was much more specific than the first Superfund law, supported by a lot more funding, engaging more of the community, advancing funds, as I think you have acknowledged before, to the States that have begun an action that otherwise would not have been available. As a matter of fact, there is interest due as a result of having funds committed.

I just wanted to find out about the interest on phased funding money that now becomes due and available to States, and that is an innovation introduced in the second law.

Let me ask you this, do you think that as a result of the specificity of the new law that when the sites are completed that we have a better opportunity for a clean site than we otherwise might have had?

Mr. **Dewling**. Yes, without any question. I think having more public involvement up front, having a greater opportunity to review all these technical options, I think, gives us more flexibility in coming up with a more permanent solution. But in going to that end, it is going to take longer and cost more.

Senator **Lautenberg**. More complete, however.

Mr. **Dewling**. That would be our personal feeling. It would be more complete.

Senator **Lautenberg**. Will New Jersey benefit overall from the increase in funding?

Mr. **Dewling**. Yes, very significantly.

Senator **Lautenberg**. Would you agree that the possible need for testing new techniques, doing treatability studies will lessen the difficulty as we get more experienced, as we develop better date, as we invest more in the earlier phases of these?

Mr. **Dewling**. There will still be the unanswered questions comparable to what you have in Lapari in terms of how much recovery you will get and how clean is clean, and there will still be those differences of scientific opinion. But I think you will focus more clearly on how confident you are in reducing any public health exposure by doing those types of treatability studies.

Senator **Lautenberg**. So, it is possible that the cleanups, as a result of new technology, might be better and more permanent.

Mr. **Dewling**. Without question.

Senator **Lautenberg**. I want to touch on the DEP delays in completing the RIFS that the Inspector General's report had. I wanted you to hear the comment from the Region II administrator, and I just wanted to give you a chance to respond to the delay assertions in there.

Did you support their evaluation of why your department was running some 6 months behind theirs—to use whatever the time frame is? Is that exclusively a competitive bidding?

Mr. **Dewling**. No, I think by the time that report came out, most of those activities that were mentioned by EPA, we had corrected those. We have tried to streamline where possible, cutting the time frame internally, administratively, to handle these types of activities.

We now have a short list of consulting engineers, and with that short list, then we now go to the top three every time we have an RIFS start, but we don't have a prime contractor, a single contractor.

Now, there are pluses and minuses in all of that. When you are dealing with a single contractor all the time, you get one thought process because it is the same contractor all the time. We feel more competitive and we get a better price but, more importantly, we get different ideas and different approaches to solving problems, and we have the same group of 15 to 17 consulting engineering firms from around the country who are working on that type of activity.

I think at this present time, I think our scheduling is just about the same. The RIFS stage—maybe we are about 2 or 3 months beyond what the Federal Government is.

Senator **Lautenberg**. How about the work load? EPA thinks that the work load is a contributing factor in shortening these delays. Is there any merit to that suggested staffing requirements, et cetera?

Mr. **Dewling**. One of the biggest problems we have—I will be honest with you—is that the competition for qualified people. We have in this area the contractor that has the EPA master contract, and then we have DEP and we have EPA. And you just have a certain nucleus of people involved in that activity.

So, the Federal and State governments become a wonderful training ground for the private sector after 2 or 3 years, so we have a shift of new people coming in. Obviously, that education is exponential, so it takes us a while to pick up on it.

Senator **Lautenberg**. Is there an opportunity perhaps for a State like ours to initiate more effective training programs to get people available and ready to take on these jobs? Because I see them, unfortunately, as a permanent part of our futures. In New Jersey and the country as a whole, dealing with the environment is going to be a major part of our existence in the future. People are now conscious of what a clean environment means to their health and their ability to feel at ease with their families and their homes and so forth.

A place like this, obviously, is one of the places that can help and has taken an interest. I would hope that you are communicating with the Department of Higher Education as well and making them aware wherever we can that we should try to train as many as we can of people qualified within our State.

Mr. DEWLING. We just started a program with Rutgers Medical School, now the Johnson Medical School, where we have a scholarship program used for toxicologists where they will work for the Department and also be students, and we have a reciprocal program where, over a 2 or 3 year period, we have a cadre of people that are trained in that area.

Senator LAUTENBERG. What does this say, then, Commissioner, about current opportunities to get full staffing? Is that an elusive goal for you?

Mr. DEWLING. No. I think our full staffing is a matter of the timeliness of filling positions. In the Superfund program, we are exempt from any of the civil service requirements because of the high priority that we assign to it, and we can hire people directly off the street.

A ground water hydrologist is a very unique person, and the ability to do all the mathematical calculations is a very unique person, and there are not that many people out there with that skills base. So, we find ourselves in that type of competing environment.

So, in some of the critical areas, we are now going on the outside to consulting services to get through some of our contracts.

Senator LAUTENBERG. I just wanted to get a response from you on Superfund funding. According to a newspaper article last week, you hope for more Federal Superfund dollars in 1987. Correct?

Mr. DEWLING. That is correct.

Senator LAUTENBERG. Then, you would have to disagree, if you have looked at the President's budget assumption, that as much as $300 million of appropriated Superfund dollars could not be spent in 1987. You can use more in New Jersey and use it effectively.

Mr. DEWLING. What has happened is that—you know, you talk about delays. By putting—and I have to be honest with Region II. You know, there is an EPA in the region and there is an EPA in Washington that we have to deal with here. They have a program where they are trying to phase-fund the money and trying to spread it. If the money were given up front, we could be assured of the completion of that project.

Now, by putting the Lone Pine landfill which has a problem of finding a suitable source for the treatable leachate or, like Bridgeport, putting that in the next fiscal year, again, it is only a 3-month lapse, but it is the next fiscal year. So, it is 3 months here, 3 months there.

But the two projects that would have brought us over that fund would be at Bridgeport and Lone Pine. Those are the two big projects. But we will get funding for them in the early part of next fiscal year.

Senator LAUTENBERG. You made the point in your remarks that the earlier these things start, the likelihood is that they will be less expensive to get done. We see these costs escalate constantly way beyond the inflation factors. As the skills pool dries up and gets absorbed by the opportunity, it costs more to get more people into the loop and new technologies and may very well cost more. It may be more effective.

If you did have some additional funding, the primary activities and sites that would have received it were, as you mentioned, just a general kind of thing or do you have some other specifics?

Mr. DEWLING. We can identify the sites. We would have started more designs this year. But, again, you are limited by staff. You are limited by the private sector capability at this time in some cases.

Senator LAUTENBERG. You have no problem with calling on outside contractors wherever possible?

Mr. DEWLING. Most of our work is done by the outside contractors. All the RIFS—we don't have an in-house capability to do any RIFS. All we do is the quality assurance and verification of some of the science relative to our office of science research.

Senator LAUTENBERG. I want to get that phased funding matter cleared up. I wanted to get it into Superfund, and you are saying that EPA and the Corps are not complying with congressional intent. Is that correct?

Mr. DEWLING. That is correct.

Senator LAUTENBERG. What would you see ideally as the funding structure? I think in your testimony you talked about the funds consumption that comes from fully funding these projects. Would you have it less than fully funded and adopt phased funding wherever possible? Are you satisfied that 5 years from now, you and I or others are going to be able to continue to pursue getting funding for these projects?

Mr. DEWLING. Let me have John Gaston respond to that, but it is not EPA's problem as much as it is the Corps of Engineer's problem. What they are saying is if we have a State lead project, they have to receive from us all the money up front, that there is no way for us to give them that money over a 4 or 5 year period.

We can take that money and bank it and say it is committed, it is obligated, so I can guarantee the long-term funding, but for me to take $100 million out of a State appropriation and not receive interest on that $100 million becomes, from our Treasury standpoint, very unacceptable.

So, what we are saying here is it is not an EPA problem EPA is trying to bend over backwards to resolve this issue, but right now in the statute, the Corps of Engineers cannot operate in that fashion in the same vein as they operate in the civil works program. What we are asking for is a way to mirror image the way they operate in civil works as they operate in Superfund.

John?

Mr. GASTON. That is pretty much the situation. As we get to the real big dollar projects such as Bridgeport where the next piece is $53 million, that is a lot of money to tie up, both in the national program or, if New Jersey had to advance fund, we would have to advance fund $53 million and put it in the Corps' hands to not be spent down for maybe 2 or 3 or 4 years.

So, there has to be a way to allow for a financially efficient management of money and of sharing of the accountability for the performance of these projects. It is easy when the dollars are small. It gets progressively more difficult when the dollars are large.

All the efforts that we have made to date and your efforts, Senator, through the conference report to try to resolve the matter, still leave the lawyers at the Corps with the uncomfortable feeling that they can't or won't deal with the problem in the way that we think makes financial sense for everyone.

Senator LAUTENBERG. Commissioner, are there any issues that you see as disputatious or contentious between DEP and EPA that you think ought to be dealt with to maybe give me an opportunity or those of us in Congress to make some adjustments if necessary? Is there anything that you would recommend?

Mr. DEWLING. There is one issue that I will be probably communicating with you in the future on, and that is the water supply replacement program. We did get some amendments in the new tax bill that excluded—and we have put a water line in. We direct a private water utility to put a water supply in.

If we want that water supply to go in, it is going to cost $2 million because now they must report that as an asset to their system. Now, they are going to have to pay Federal tax on that.

As a result, the $2 million job that we had is now part of their total system. If their net worth was $20 million and we added a $2 million system to them, now it is $22 million for that year. They are going to have to pay tax on that.

We are asking the State, then, to pay under the Superfund program because they won't put the water line in unless we agree to pay the Federal tax. What we have done now is get an exclusion for about the first 10 or 15 water supply systems, through your good office and Senator Bradley's office, in the new tax bill.

Now, that is going to become an on-going program that is going to need addressing in the next couple of years.

The other big issue that is something right now that you can't help but that we are having problems with—being first causes the problem that sometimes we need decisions, and being the first State to have faced some of these problems, the agency properly does not want to make some of these decisions with an impact on the States in a negative way and just accommodate New Jersey's problems.

The off-site policy is, of course, a delay. That is a problem. The POTW liability issue I think is something in the long range that the U.S. Congress and the Senate can address. The off-site liability issue is something that I think internally within EPA they can identify that problem.

Senator LAUTENBERG. But the POTW issue ought to be able to be settled within the State, shouldn't it?

Mr. DEWLING. What they are looking for is under—we identified waste water treatment plants as exempt under RCRA. We don't make the same clarification under CERCLA.

So, right now, they are concerned that they are now to some extent liable for these actions. So, it is a small clarification.

Senator LAUTENBERG. We will take a look.

I want to talk for a moment about the Montclair site. The problems there have troubled us all. Thus far, it is universally unacceptable for those within the area, those outside the area, and whatever department of government we look at.

There is a May 15 court ordered deadline of a plan for removing the valves. Is the State going to be able to meet that deadline?

Mr. **Dewling**. We anticipate meeting that deadline, yes.

Senator **Lautenberg**. Beside a public thrashing, what happens if you don't meet that deadline?

Mr. **Dewling**. I am personally in contempt of court.

Senator **Lautenberg**. So, practically speaking, is there much hope of getting that soil transferred out of State at this juncture do you think?

Mr. **Dewling**. I don't believe so. We are in the Supreme Court of the United States, and we have taken every possible enforcement action to—I mean, we even supported sending a citizen from Montclair out to Las Vegas for a citizen's suit, and the State financed the legal fees to the tune of almost $40,000 to try to get the court to remand this decision out of the Supreme Court, and we were unsuccessful.

Senator **Lautenberg**. The affected homes, are they being vented at this point?

Mr. **Dewling**. The families of the four homes that are out, these families are out of their homes now for the past 18 months. Reimbursing them for their costs, to me, doesn't morally meet any type of commitment. As was mentioned by their counsel, these people are suffering that type of impact.

The other homes have been part of the EPA emergency fund. They are being vented or remediated on a temporary basis.

Senator **Lautenberg**. Are they meeting the health standards that are recommended or the measurements that are recommended for safe occupancy?

Mr. **Dewling**. The annual 0.02 working level, I believe, at those houses have been vented. You would have to check with EPA on that.

Senator **Lautenberg**. You are talking about those that are occupied?

Mr. **Dewling**. That is right. The houses that we remediated, the four homes in—we had West Orange, Montclair, and Glen Ridge. We did four homes in Glen Ridge. Those are the 10,000 drums that are down in Corning. Those four homes where the people are back in their homes are completely remediated and meeting the 0.02.

The homes where we have the people out, we haven't remediated those homes because they are not occupied.

Senator **Lautenberg**. Does it pay to try to install some kind of ventilating system in there to move that air along? You have a way of measuring it on a fairly regular basis?

Mr. **Dewling**. If they are not occupying the homes, we have no——

Senator **Lautenberg**. Well, is the mission ultimately to get those people back in their homes?

Mr. **Dewling**. My goal last year was to get them back in by last Christmas, and my goal this year is going to be the same, but that is going to require the cooperation of the township itself, because I don't have a total free hand. The department does not have a total free hand in that situation.

If we are looking at moving the drums, the question here is if you want to get the people back in their homes now on a temporary basis, you are not going to be able to do full remediation as was proposed originally. So, we may have to do what we did at Clinton and some of the other successful areas around the country.

There is no other area in the country that has gone through that type of remediation, full excavation. What I am saying to you is the radon problem, whether it is man made or whether it is natural made, has the same public health impact and it is concerned and serious, as you well know.

But the option for remediation in one case because you have a Superfund program, there is one approach, and in the other case where we don't have a Superfund program, we look at another approach. What I am saying is you have to balance the needs and the public health exposures and look at trying to solve the problem today with the approach that we have been using elsewhere.

Senator LAUTENBERG. You know the citizens in the area and, again, you are aware of the fact that I live nearby, and I hear, therefore, a fair amount from people in the neighborhood.

Even those who don't live directly in the affected homes area are very anxious about what health effects might develop as a result of exposure even in the barrels, and you can understand people's concern even if the technicians don't think it is a threat. The fact is that you see this reminder constantly in front of you.

Let me ask you something. May 15 is a very significant date here, and, therefore, I assume that you would have a plan in place by then that gets this material dealt with in a way that the court has demanded.

Mr. DEWLING. We have contracts that are prepared to move. Without identifying a particular site, the contracts are written to cover certain distances, and we are ready to implement as soon as we finalize the last aspects of it.

Senator LAUTENBERG. Okay. Well, I thank you very much, Commissioner and Assistant Commissioner Gaston for your always direct and candid appraisals. I once again compliment you for your diligence and your effort in making certain that all of New Jersey is an easier place to live based on environmental concerns, and I look forward to continuing our work together.

If there is anything that you would like to add, you will have a week in which to do it.

Thanks very much.

Mr. DEWLING. Let me thank you again for your personal involvement in all the activities we have in the State. We really appreciate it.

Senator LAUTENBERG. Thank you.

The next panel is Mr. Hirschhorn, Mr. Cole, and Mr. Brown.

Each one of you is welcome, of course, and I would ask that you identify yourselves before you give your testimony and would ask you please to submit to the oath as others have before you.

[Witnesses sworn.]

Senator LAUTENBERG. I will just go from left to right there and ask that Ken Brown start. Ken, it is always good to see you, each of you. I have had some contacts with each of you, and each one of you has an experienced background that I respect greatly, I thank you for your professional as well as your personal interest in matters of the environment.

Ken, if you would identify your organizational affiliation and please try to limit your testimony to 5 minutes.

STATEMENT OF KEN BROWN, EXECUTIVE DIRECTOR, NEW JERSEY ENVIRONMENTAL FEDERATION

Mr. **Brown**. Thank you, Senator.

Mr. Chairman, my name is Ken Brown, and I am the director of the New Jersey Environmental Federation which is the New Jersey chapter of Clean Water Action. With me today on my right is Dr. Henry Cole, the science director for Clean Water Action and the National Campaign Against Toxic Hazards. Dr. Cole has had extensive experience in providing technical assistance to a number of community groups that have Superfund sites in their communities, both in New Jersey and in places across the country, and we will hear some examples from him in a little bit.

The New Jersey Environmental Federation of Clean Water Action and the National Campaign Against Toxic Hazards all applaud your continued efforts to solve the nation's toxic waste crisis. The strong Superfund law that we now have would not have been possible without your strong leadership.

We appreciate the opportunity to testify today, because we share your deep concern to make sure that the Superfund law works as we all intended it to do, and I want to thank you for your personal and professional commitment to getting the law through. I know that I was on the phone to your staff many times in many situations during the 3-year battle, and your staff was professional. Every time we were in trouble and the bill seemed to be stalled, you really came through and led the fight in the Senate, and citizens in New Jersey and across the country thank you for that.

As you know well, the New Jersey Environmental Federation is deeply involved in Superfund issues. Our 21 member organizations worked hard for the strong reauthorization. Many of these groups are primarily concerned with Superfund sites in their communities.

Some examples include the Ocean County Citizens for Clean Water who are fighting to clean up the Ciba-Geigy site in Toms River, New Jersey; the Burnt Fly Bog Citizens Advisory Committee working on Burnt Fly Bog and Imperial Oil; the PJP Landfill Task Force which led the fight, with your assistance, to put out the fire in Jersey City; and numerous other groups that we work very closely with are part of the federation.

In addition to our legislative efforts on Superfund, the Environmental Federation and Clean Water have provided both strategy and technical assistance to dozens of Superfund communities across the country.

We recognize that the new Superfund has only been in effect for five months and that it represents a huge increase in both the size and requirements of the program. Nevertheless, we are disturbed by some initial signs that EPA implementation may be weak in two critical areas, the selection of cleanup options, that is, to ensure that the cleanup options chosen involve permanent treatment and meet cleanup standards and, number two, public participation. First, the cleanup issue.

The new Superfund law clearly states a strong preference for permanent solutions, that is, those solutions which reduce the volume, toxicity, or mobility of hazardous substances. EPA and the DEP here in New Jersey are required to utilize these technologies to the maximum extent practicable.

The law states also that off-site transfer should be the least favored choice, and it also requires that the cleanup must be protective of human health and the environment and meet applicable health based standards of Federal and State laws.

These requirements grew out of widespread concern that EPA cleanup plans were based primarily on methods which leave nearly all of the hazardous waste in the ground, off-site disposal and onsite containment. Congress, due to your lead, clearly recognized that stopgap cleanups leave communities vulnerable to the threat of exposure for generations to come. Moreover, it became clear that there was no uniformity in the degree of cleanup provided at different sites.

For example, at some sites, pump and treatment systems were planned to restore contaminated aquifers, and at other sites, the only remedy chosen was replacement of the water supply, and they left the contaminated groundwater intact.

Through our assistance to community groups, we have had a broad range of experience with a variety of Superfund sites. What we are seeing at these sites is disturbing.

It seems that the citizens in these places are far more enthusiastic about the cleanup requirements of SARA than EPA, and Hank Cole is going to briefly run through a couple of examples, so we are going to merge our 10 minutes.

Senator LAUTENBERG. That is fine.

STATEMENT OF HENRY S. COLE, SCIENCE DIRECTOR, CLEAN WATER ACTION

Dr. COLE. Thank you.

Senator, I would like to thank you on behalf of the National Campaign Against Toxic Hazards and Clean Water Action nationally for your tremendous role in the Superfund. I can assure you that your reputation on this piece of legislation is far beyond the State of New Jersey.

Let me respond to some comments made about the length of time that it takes to clean up Superfund sites. My experience with citizens is that they are willing to take more time to do something if they have the perception that it is buying quality. On the other hand, if they feel it is a delay without any reason, they have no patience with that.

In other words, they are willing to spend more time to do the cleanup right, and that has been my experience at site after site.

In my written testimony, I have two or three case examples. Two of them happen to be out of sight. I think I will not say much about Attady and Gass, the site up in Kingston, New Hampshire other than it is the first cleanup decision under the new act and that there are some disturbing precedents that have been set.

We thank you, Senator Lautenberg, for taking action on the important issue of groundwater standards which you have alluded to. This is one of the sites where that is an issue.

Another issue that has been less talked about at that site is the PCB cleanup. There, EPA cleanup plans would only treat those soils which have a PCB concentration above 20 parts per million. They would use incineration.

The citizens in this community preferred an alternative of complete incineration of the contaminated soils at the site to get rid of all of the PCBs or at least to a much lower residue. Clearly, EPA has rejected an option that is practicable, incinerating a much larger volume of soil to take care of the problem. They have chosen not to do that, and I think with something as toxic as PCB in very small concentrations—it is carcinogenic, it does bio-accumulate in the food chain, it is highly persistent, and it is not good to leave 20 parts per million lying around.

The next site where I just came from last week is really an amazing site. It is the industrial excess landfill in Uniontown, Ohio. It sits between Akron and Canton, and it received millions of gallons of hazardous waste from chemical companies and rubber companies in that area.

All of the 20,000 people who live in that area depend upon groundwater as their sole source for drinking water, and scores of families live within a half a mile of the site. While EPA's emergency response eliminated the threat of methane explosion—you see, this is a municipal landfill—large quantities of methane gas continue to be generated and are not affected by the emergency system.

The gas also contains hundreds of parts per million of toxic volatile organic compounds including benzine, trichlorethylene, and tetrachlorethylene. There is some evidence that these gases continue to migrate through the soils towards peoples 'homes.

A number of the same chemicals that have been found in the gas that is being pulled out of the site are the same chemicals which are finding their way into well water, and residents who have been tested have found the same chemicals in their blood. This is the situation that now exists at that site.

The Uniontown site is still in its RI stage. A cleanup is many months away. However, EPA in Region V appears to be setting the stage for a substandard cleanup. Let me give you two examples of this.

The citizens had to plead continually, time after time over the course of the last two years, to get anything that begins to resemble a proper groundwater monitoring system. They had a huge gap. It was embarrassing. I used to work for EPA. I was embarrassed by the ground water design that they have leaving two huge segments or two margins of the site totally unmonitored. There was no way that they could map the groundwater plume.

After citizen pressure, then they finally came in and put in additional groundwaters and are willing now to test additional private wells.

However, one issue which is extremely important still remains. The EPA has not agreed to do any core sampling of this 20-acre landfill. The only sampling they have done is on the surface, and everyone knows that clean fill was put above the wastes, so it is not representative. They simply have taken no cores, if you can believe this, within the middle of this site.

That means that they don't know anything about the distribution of hazardous waste within the center of this site.

Senator LAUTENBERG. How deep is a core sample?

Dr. COLE. Well, it could go—I believe that the bottom of this landfill is anywhere from 30 to 60 feet, so it should go down to the bottom, because we understand that wastes were piled in there right above the water table, but they haven't taken one core that goes below a few feet.

How can you do a permanent cleanup if you don't know what is in the site? There may be several hot spots that need to be excavated and treated. There may be other alternatives for less contaminated parts of the site, but they don't know that.

In fact, what is very disturbing is that the informational base might only get you something like a replacement water supply.

EPA is even resisting doing more extensive testing of the gases that are being generated in this site. They are going to have to do gas venting for the next 30 years at this site. They don't know how rapidly this is being generated or what the effect, let's say, of putting an impermeable cap over this site will be on the pressures in the gases.

Citizens have brought these points up. It is embarrassing to me that EPA resists doing the work. They accuse citizens—I can't believe this—of wanting a research project to be conducted at this site. That is the line we get, that citizens are causing delays.

The truth is that EPA, by not doing the work at the beginning, makes the work inevitable, at least if they are to follow the Superfund, later in the process, and then you get the delay. If they do the proper research in the beginning, then the problem is solved.

Finally, let me say a word about a New Jersey site, the Ciba-Geigy site in Toms River. We know that there are more than 100,000 drums of toxic wastes in the ground. It is very close to the Toms River. We know that the groundwater there is contaminated. A plume is moving in the direction of neighborhoods. EPA has allowed the company to put in some interceptor wells, and water is being treated, the contaminated water being pulled out of the ground is being treated.

However, EPA is allowing the company to discharge the treated ground water only 1500 feet off of the Jersey shore near Lavallette. We are greatly concerned that EPA will select a long-term cleanup plan that would pump even larger amounts of toxic substances into shallow ocean waters. We believe that using the ocean to clean up the Superfund site is clearly contrary to SARA's provision stating that off-site disposal is the least favored option.

I am going to turn this back to Ken Brown who is going to talk about the technical assistance grants.

Mr. BROWN. The reason we mentioned a couple of the out of State sites is that they were critical decision points, and what we are hoping is by raising these issues now and with your help that we will prevent those kinds of decisions and those kinds of precedents from taking place here in New Jersey.

The second very critical provision of the Superfund law that we want to talk about which you have mentioned many times today is the innovative provision that allows citizens to apply for technical assistance grants. This will enable community groups to hire their own independent experts to review information concerning the sites.

The above examples show the critical role that citizens can play in encouraging strong implementation of the new law. The grants will give citizens another important tool to effectively participate in cleanup decisions and affect those decisions that are going to impact on the places where they live for generations to come.

We have seen in the very few sites that a person like Hank Cole can help in the kinds of improved quality cleanups that we can get where citizens can get technical assistance.

Unfortunately, as we heard this morning again, EPA is depriving scores of communities from getting the technical assistance that they desperately need. According to EPA, these grants will not be available until next winter. The regulation will come out in the fall, but the reality is that the grants are not going to come through until next winter.

This is totally unacceptable to us, particularly in light of the fact that groups living near such sites as the Ellis site and Burnt Fly Bog, Imperial Oil, the radon sites, the diamond alkali site in Newark, and many more across New Jersey are or will soon be at the critical stage of the cleanup selection process where they desperately need technical assistance.

The grants may be all but useless after these critical decisions have been made.

There is, however, another way, and I would point out that I really thought that Chris Daggett's statements—I don't attribute them necessarily to Chris Daggett's policy. I think these decisions are coming from Lee Thomas in Washington, and we have had very good experience in working with Chris Daggett in the region, but I think their excuses were very phony, to be quite frank.

If they were very sincere about moving the technical assistance grants of the program, they could have gotten this advance notice of rulemaking out within a few weeks after President Reagan signed the bill, if they were really serious about this, and we would have this interim rule and a situation now where it was final.

There is still another way that this problem can be corrected. If EPA is truly serious about giving citizens an effective voice, they can issue this interim final rule which they are planning to issue in the fall. They could do that right now and begin making grants available immediately while, at the same time, soliciting public comments on the rule which is their excuse for not moving forward.

This is an innovative part of the program. It is going to take some time to work out the kinks, but what better way to learn about how to work out the kinks than to give a few grants to places that are at critical stages. We can learn from that experience. That can be added to the base of comments on the technical assistance grants and their proposed rule, and then will issue a final rule sometime in the future.

But there is no reason that they can't issue an interim final rule very soon and get the grants out to communities which desperately need them.

Senator Lautenberg, we would like to request you to continue to press EPA to take this emergency action so that we can get this money out.

In summary, we are very confident, Senator Lautenberg, that you will continue to use the influence of this important oversight subcommittee to ensure strong implementation of the new Superfund, and we look forward to continuing to work with you on this important task.

Thank you very much.

Senator LAUTENBERG. Thank you very much.

Dr. Hirschhorn, we would be interested in hearing from you, and then we will get to questions.

STATEMENT OF JOEL HIRSCHHORN, SENIOR ASSOCIATE, OFFICE OF TECHNOLOGY ASSESSMENT

Mr. HIRSCHHORN. Thank you.

I am Joel Hirschhorn, senior associate, Congressional Office of Technology Assessment where I have been directing major studies on hazardous waste for some years.

I will just give a few highlights of my prepared testimony.

The first thing I would like to talk about are feasibility studies. They have come up in several discussions already. Feasibility studies are really an extremely important critical stage of the whole process.

The first point I would like to make is that there are no professional recommendations anymore in feasibility studies. It seems to OTA that the original idea of having objective professional engineers make a recommendation to the government was a good one and that being professional engineers, they would have done a thorough analysis to back up their recommendation. If the Government didn't want to accept that recommendation, then it would have had to defend it.

What we see now is that feasibility studies come to resemble engineering textbooks which contain old data and rote discussions that are obviously stored in engineering firms' computer systems rather than studies which are focused on specific sites and their problems.

EPA is directing its contractors not to make recommendations in feasibility studies. The reason seems to be that EPA wants greater flexibility in choosing a cleanup remedy for its record of decision. Clearly, non-technical factors influence EPA's selection of a remedy.

When cleanup recommendations are not made, the public, particularly the affected local community which has an opportunity to examine and comment on a feasibility study, is at a considerable disadvantage. Delving into one or two highly ranked recommended cleanup options is one thing. For the public to examine four or five or six options is an incredible burden, a severe technical burden.

So, I submit that the absence of discrete, explicit, professional recommendations in feasibility studies represents a change from the beginning of the Superfund program and that it has a lot of implications.

My second point is on the identity of contractors who do feasibility studies. I have become concerned over the fact that it now appears that certain EPA officials in regions are interested in not identifying who does a feasibility study. The public and the affected community may find it relevant to examine the credentials of the people working on a feasibility study. The past studies of that firm and past indications of the quality of the contractor's work, it seems absolutely unreasonable to hide, to conceal the identity of a contractor performing such a study.

My third point is that we see a very significant trend—and this was very clear to us in the Lipari site study that we had done for you and others—of shifting work and decisions away from the feasibility study to later subsequent hidden, less visible stages of the Superfund process. The content of feasibility studies and records of decision which are based on them are becoming increasingly vague and generic. To a large extent, this is exactly what happened in Lipari, and I will use it to explain our interpretation of the situation there.

My point is that there are scientific analyses, data gathering, laboratory and field testing critical to the examination and selection of a cleanup remedy. I want to emphasize that, critical to the examination and selection, because what you have heard here today is a different kind of logic. They are telling you that they are going to do these things after they have made the selection and the decision.

RODs by EPA should make it crystal clear what the cleanup will be, and they do not do this anymore. The public and the affected community, therefore, must examine and comment on things that don't really say what will or might happen at the site.

EPA is clearly shifting detailed engineering work and decisions to the subsequent design phase.

In the case of the Lipari site, I would like to comment on that for a moment. We believe that a technically faulty cleanup selection was made because important scientific analyses and tests were not performed as part of the feasibility study. Instead, EPA has said that they will occur as part of the design phase.

I raise an interesting question—at least, it seems interesting to me—is there a conflict of interest when the same people who choose flushing at Lipari will also determine whether or not it works? And I think this has not come up before, and I think this conflict of interest needs more attention.

The second broad area I want to talk about is the actual technologies themselves. We have heard a little bit about that before, and I would like to offer a completely different view than particularly Mr. Dewling has offered here today.

EPA and its contractors still have a tendency to either ignore newer cleanup technologies or to underestimate their effectiveness, feasibility, and reliability, and they also overestimate the cost of new technologies. Because of a lot of increased spending over a brief time, we literally have an army of technical specialists to carry out Superfund, and they have very little practical experience. They are very young people straight out of school in most cases. They don't even have the formal academic training in rather esoteric technical fields required to deal with Superfund cleanups.

So, what we see is that we don't have the information transfer and we don't have the people in EPA and the contractors who feel bold enough or credentialed enough or experienced enough or knowledgeable enough to select new technologies. The whole system that we have created tends to be risk averse, conservative and hesitant to deal with newer technology.

EPA should work to dispel the growing myth which was accurately stated today by Mr. Dewling that permanently effective cleanup technologies inevitably result in enormously higher costs and longer times. I think that statement and that position that we have heard today which we have often heard sort of behind the scenes, I am glad to see it coming out in a more public way.

It simply is incorrect, absolutely incorrect.

For one thing, this position that you heard focuses on near-term immediate costs and ignores what we have been talking about for years that the whole idea of selecting a permanently effective remedy was to eliminate repeated cleanup costs. So, when people talk about higher costs, it may appear higher in the near term, but if we take a longer-term view and if we don't have to go back to the same site again and again and again, then the costs would be lower.

That is only my first point. There is another reason why these people are wrong.

The purpose of technological innovation is not only to obtain better technical solutions but also to reduce their costs. This is exactly what is happening in the evolution of cleanup technologies.

We have brilliant people in America. We have inventors. We have entrepreneurs. They in fact have been developing new cleanup technologies, and these technologies are not only more effective technically, in many cases, they reduce the cost and the time of implementation.

The problem is not in the development or availability of better cleanup technologies but in government agencies not using them. We have pointed out in a number of case studies, including Lipari, how already demonstrated newer technologies could have been selected and used at the site.

I want to emphasize that at Lipari, the technology that EPA chose, the flushing technology, was never demonstrated. It was unproven, undemonstrated technology. Compare that selection to the fact that other technologies which had been demonstrated to be effective were really ignored and never factored into the decision making.

My last big point, and maybe it is the most important, has to do with quality of work and the spending of our money, our nation's money. Will the many dollars spent by the Superfund program result in effective environmental protection? It seems to me that is the bottom line question. Are we getting protection for the money?

I would say unless EPA provides many more resources for technical oversight of contractor work at all levels of Superfund, we are likely to waste a lot of money. Some creative thinking is necessary to improve independent—and I stress independent—professional peer review of contractor work.

As it stands today, EPA is stretching its resources to take action in response to a lot of intense criticism from almost everyone. But I also submit that there may be a conflict of interest here, and I don't think that EPA anymore is in the position of providing independent quality control.

My last point is about the technical assistance grants that other people have spoken about. Many people are saying that technical assistance grants to communities will cause extensive delays in Superfund's implementation. Well, they may be right, but I think we ought to understand one thing. If technical assistance grants to communities results in delays, it will be because of genuine problems, a lack of technical quality in the work performed by EPA and its contractors.

And we shouldn't shrink from that oversight. It is a shame that we have to rely on the communities and these technical assistance grants to assure quality, but people ought to understand that the problem lies not in the oversight either by the communities or by Congress. The problem lies fundamentally in a lack of quality work by EPA and its contractors.

Thank you.

Senator LAUTENBERG. Thanks very much.

I dare not, as the chairman of a subcommittee like this, nod so forcefully in agreement with the things that I hear you say, and any similarity to my nodding approval and my just nodding is coincidental.

When I hear Mr. Hirschhorn give his vigorous and detailed response to the questions, I am reminded of a situation in perhaps a surgeon's office. You say the judgment is made by the people who perform the function. Then, when we bring in the grants to the community. It is like the doctor saying to the patient I am going to operate on you and the patient not knowing what part of the body he is talking about, and then telling the patient who has just been so handled that the operation is a success without either consulting the patient before or after the surgery.

It doesn't sound like a good way to do business, especially when it affects the health of one's family, one's community, and so forth.

We heard, as you just rebutted, that the Superfund amendments that were so—if I may say—meticulously drawn—at least, we attempted to do that, because one of the things that happened in the first 5-year experience of Superfund, a poor result was obtained. And with that experience and with the scandal that went on there which was obvious and which wound up being reported continuously to the point that it wound up in judicial reviews that we don't want that to happen again.

I think, frankly, we would have been remiss if we wrote another Superfund law like the old one just expanding the funding base. I think that would have been totally irresponsible.

So, we got into it in a more specific way, and what we are doing now is fighting the battle, in many cases, over and over again.

One of the things that is being said casually is that Superfund amendments will cause cleanups to take longer and cost more. Well, I think I heard you say, Mr. Hirschhorn, that you don't agree because if we don't clean it up right the first time, we are going to continue to clean it up, perhaps forever, and just spend more and more money on it.

So, that you disagree with it in concept in terms of the notion that you can't just make the assumption it is going to cost more because it is better.

Mr. HIRSCHHORN. Absolutely. I might add one other point. The other very significant change in the statute was giving EPA greater money and actually more time to take what they call removal actions which are really the ability to act very quickly at sites—and we have maintained for a long time that EPA has either no strategy or the wrong strategy, but a good strategy would make sure that almost all sites get some immediate attention to recontrol them, to stabilize them, to prevent the immediate release of hazardous materials into the community.

I think we heard some people from the community level today concerned about this inattention. What people don't understand is, statistically, most sites don't get much attention in the United States. As EPA puts its focus on the big ticket item, the high cost remedial permanent solution and not enough attention on the front end of the Superfund system.

I would point out that there is no Federal effort to identify and discover sites. That is left entirely to other parties to tell the Federal Government about sites. And we still maintain that there are many more sites out there than EPA admits to. The inventory of sites has been growing steadily, month by month, no decline now over 6 years or something.

So, I just submit to you that another way to get more environmental protection at lower cost, it turns out, would be to take more advantage of those quick, relatively easy technical things that can be done at a site. For example, we see many sites around the country exposed to the rain and the elements, not even a piece of plastic to prevent more water going in and leaking more toxic chemicals into the groundwater.

There are common sense things that are simply not being done.

Senator LAUTENBERG. But yet we hear the response that says it is impossible for us to maintain that schedule both within the State and outside the State, and DEP criticized the site inspection program. They are saying that it couldn't be accomplished, and EPA said that they couldn't accomplish it.

Is it of such technological magnitude that these things are hard to do? Maybe a simple advertising program to the community at large might elicit response at least that tells us what is out there. If it is one barrel of highly toxic material that is in the process of rusting away, it could get to be pretty serious, and you don't dismiss it casually because it is only one unit.

On the other hand, that information is hard to come by, to assemble, and we ought to find ways to create some input from the community at large, from the citizens at large. I don't understand why they can't meet the schedules that are proposed for site examination. Obviously, if we find them earlier, we are going to have to spend a hell of a lot less later on cleaning them up. Prevention will cure the old business.

Mr. HIRSCHHORN. I just also suggest I agree with you that EPA is spending enormous sums of money, for example, on feasibility studies that are just terrible. I mean, I will make a blanket statement. I used to be a professor, and I have worked in industry, and I have had to review, and I have been an editor of journals and things. I have never seen a feasibility study yet that would pass any kind of professional peer review.

What I am saying to you is here we are spending $1 million or more now on a feasibility study that would never pass any kind of technical peer review. For that $1 million, we could have gone into the site initially with a higher priority and done something simple but sensible to better protect the community.

I think we have misplaced priorities, and the money is being spent in the wrong ways.

Mr. BROWN. If I could jump in here——

Senator LAUTENBERG. Please.

Mr. BROWN. I was appalled at some of the comments that Commissioner Dewling was making this morning, and seeing that he was already making excuses for not succeeding in the cleanup of sites here in New Jersey while the new program is just getting going.

I would agree completely with Joel that in the long run, it is going to end up costing a lot less when we adopt these new kinds of permanent treatments and it is not going to cost us more money. If you take a site like the Lone Pine landfill, they are going to leave volumes of waste there forever that may continually leak into the Manasquan River and be a problem there.

We are better off taking steps early to adopt permanent treatment rather than leaving the waste there so that we can revisit it constantly for years to come.

Senator LAUTENBERG. He certainly wasn't enthusiastic in his endorsement of the Superfund law as it is presently constructed.

Mr. HIRSCHHORN. I wanted to read to you, there was another document handed out today under Mr. Dewling's name, the New Jersey Report. He is actually describing what Congress did with SARA. It is an interesting statement. "The basic underlying shift in CERCLA is the reversal by Congress from requiring"—here is the key point—"from requiring proven technologies for cleanup to encouraging the use of new and emerging or innovative cleanup methods that will achieve permanent solutions."

I find it interesting that Mr. Dewling describes land disposal, landfills as proven technology. And I find it consistent with his point that he is so worried about sending Superfund waste to RCRA facilities that have to be in compliance. The only reason he would be so concerned about that is that he still has an interest in sending Superfund waste to landfills. If he didn't have that interest, he wouldn't be so concerned about sending them to RCRA facilities in compliance.

I think we still see, as you said moments ago, that no matter what Congress does, there is a certain kind of resistance in the land, a certain kind of attachment to old ways including, I submit to you, more of an attachment to land disposal than we would like to see.

It will not be easy to move people away from containment and land disposal.

Senator LAUTENBERG. Well, unless we move them all away permanently, and then we can just use our country for land disposal.

What about the off-site policy? I thought that I heard Commissioner Dewling ridicule the use of licensed facilities for some of the materials that were discovered. He used the cup as an example, accepting as an alternative, landfill disposal possibilities.

That certainly doesn't talk of, as you suggest, innovative technologies.

Do you think wastes that are deemed to be Superfund wastes should be disposed of in hazardous waste facilities or at nonhazardous waste facilities? Which choice is more protective?

Mr. HIRSCHHORN. It seems to me that Mr. Dewling has slipped something by here, and it is rather significant. And that is Superfund, in a sense, is a much more comprehensive statute than RCRA. Superfund speaks to hazardous substances of all kinds. RCRA has a very narrow view of what is legally constituted to be a hazardous waste.

In fact, a recent General Accounting Office report just a few weeks ago indicated that EPA may only be regulating under RCRA as little as 10 percent of the nation's hazardous waste. So, the point is there are many hazardous materials at Superfund sites that are not yet regulated by EPA under RCRA. That doesn't mean they are not hazardous.

Many times, Mr. Dewling was using the phrase non-hazardous waste. He meant non-RCRA hazardous waste, but in a technical sense, these materials are still hazardous. I think that is what is really important, and that is why they should not be going to municipal landfills.

It would be an unbelievable absurdity to talk about sending hazardous Superfund materials to a municipal landfill just because EPA hasn't done its job well enough and regulated them under RCRA.

Mr. BROWN. If I could add to that just very briefly——

Senator LAUTENBERG. Please do.

Mr. BROWN. Many of the Superfund sites that we are living with here today were formerly municipal solid waste landfills, the Lone Pine landfill, the Lipari landfill, and numerous other landfills. I find it inconceivable that the Commissioner could take these wastes that are sitting in a municipal solid waste landfill which failed and has led to the contamination of a community, pick the stuff up, and then move it to another municipal solid waste landfill.

That is backward logic and a philosophy that is totally outdated.

Dr. COLE. And we all know that there are just gobs of municipal landfills just with huge volumes waiting to be filled. There is no shortage of those at all.

Senator LAUTENBERG. In closing, you saw the schedules there. Does that look like it is an ambitious target to you?

Dr. COLE. No.

Senator LAUTENBERG. Is this optimistic? Is this what we ought to be striving for?

Dr. COLE. Those are when the constructions would start, and I would hope that those don't slip any more than they have already slipped. The perspective I have is that the schedule provision of the Superfund was really very good, because it emphasized starting.

You know, these wastes, most of them remain dangerous for decades or even centuries. The heavy metals like lead and mercury don't break down at all. Radioactivity breaks down very slowly. Even the organics take a long time to decay.

So, we are talking about cleanups that will affect generations to come. And my position is let's stick to the ambitious starting schedule, but let's make sure the work is done correctly, because it is not good if you have to revisit the site time after time after time. And I think that is the thing. The job needs to be done right.

Senator LAUTENBERG. I agree. The reason I press this issue is it seems to me that we could initiate a serious study sooner, that we could begin to array the possibilities sooner, that we could, to use the EPA expression, ramp up sooner to get things going.

The way they talk about funding, it was as if we had thrown a blanket over the possibilities of getting things done instead of saying okay, here is a rare opportunity. The Federal Government has committed, consistent with the will of the people—you see it in poll after poll where people across this country say among the most important issues that they face is the environment.

Everybody understands what it is if you take a drink of water that may affect your child's health or have them breathing air that is perhaps toxic, certainly noxious. They understand that very well, and people say they are willing to pay for that. Believe me, there is not that much courage in the Congress of the United States that they are going to stand up to spend $9 billion because it looks good back home. People know that it has to be paid for, and we came up with a rather good funding scheme.

Well, why not try to move at the kind of pace that will get as much of this job done, again, before 1991. We are looking at the possibility of renewing Superfund III and looking back on the experience of SARA and saying well, we could have done it better.

I thank you very much for being with us. If there is anything else that you would like to submit for the record, we would like to have it. Your testimony, though last, was certainly the kind of thing that we wanted to hear, and that is a challenge to the stated position.

As a matter of fact, what we heard as the stated position was very much protective of the pace and the scope of things that the managers have decided is appropriate for the community. The community differs, and I am pleased to have you and the first panel here to challenge that.

Thank you very much. That ends this committee hearing.

[Whereupon, the subcommittee adjourned, to reconvene subject to the call of the Chair.]

[Statements submitted for the record follows:]

TESTIMONY OF TIMOTHY S. HALEY BEFORE THE UNITED STATES SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS, SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT, ON APRIL 14, 1987.

Mr. Chairman, Members of the Committee:

First of all, I would like to thank the committee for allowing me to testify this morning. My name is Timothy S. Haley; I am a partner in the West Orange Law Firm of Gordon & Gordon, P.A., which serves as special counsel to the Township of Montclair in regard to the radon tragedy which has plagued the Township for the last three years. Although my remarks will be directed specifically to Montclair, the problems in Montclair are perhaps just the worst example of problems which typify superfund implementation in New Jersey.

For the past three years many of our residents have been subjected to radiation exposure at levels which the Centers for Disease Control have defined as an unacceptable health risk. The technical solution has been obvious since day one of the problem; excavate the radioactive soil and remove the peoople from the exposure. Despite this obvious solution, the situation today is actually worse than it was three years ago. In my view, our continued problem is largely due to the fact that the major concern of the State is politics rather than solving Montclair's problem.

I think it would be helpful to the committee for me to provide you with a sketch of the Montclair problem. In December of 1983, after sampling conducted by USEPA's Field Investigation Team (FIT), the Centers for Disease Control (CDC) issued a public health advisory which declared that the affected residents in Montclair were suffering from an unacceptable health risk from the radioactive radon gas in their homes. The radon gas comes from radium as radium decays. The radium is located around and under these homes and is believed to have been placed there as a result of waste disposal operations from a former radium processing facility in Orange, New Jersey. In the public health advisory, CDC specifically stated that the risk of lung cancer to Montclair's residents was so high that the problem must be permanently solved within two years. As a result of the CDC advisory, State of New Jersey decleared a public health emergency.

Consistent with the CDC advisory, USEPA Region II began to implement temporary measures to begin to reduce levels in the homes pending a permenant solution to the problem. In most cases, these efforts consisted of ventilation measures which have not uniformly successful. Simultaneously, Region II began the long term remedial process of a remedial investigation and feasibility study (RI/FS), design and construction of a remedy.

When my firm was retained by Montclair in 1984 we advised the Township that it was very unlikely that USEPA would fund excavation of the material and its disposal at either of the two licensed low-level radioactive waste landfills, one of which in Nevada and one of which is in the State of Washington. Our reasoning was fairly simple. Even if all licenses were obtained and the material could be moved, the cost was simply too high. As the Committee will recall, Superfund was funded at the time to a level of approximately $1.4 billion. The estimates for excavation and disposal costs in 1984 were upwards of $200 million, most of which was for disposal. Thus, USEPA would have had to commit between 10 and 15 per cent of the entire fund to resolve the problem in Montclair, Glen Ridge and West Orange. In my firm's view, it was unrealistic to expect USEPA to commit these funds in light of its statutory obligations to develop cost-effective solutions and balance the costs of this remedy against the need to respond to all problems throughout the country (fund-balancing). Meetings between Township officials and officials from Region II confirmed our analysis.

Montclair also commissioned experts to research the disposal issue and recommend solutions. Our experts came back with three conclusions. The experts' first recommendation, as most environmentally sound, was ocean disposal of the material. This alternative was dismissed as impractical with the necessary time frames because of the lengthy permitting process and the expected substantial public opposition. The second suggestion was use of one of the Department of Defense/Department of Energy sites (DOD/DOE) used as part of management of wastes from our nation's development of its nuclear weapons arsenal. Despite the intense efforts of the entire New Jersey Congressional delegation and Montclair, with assistance from USEPA, we were not able to achieve that solution. Finally, our expert concluded that some storage or disposal location must be found in the State of New Jersey.

The response of the State of New Jersey has been problematic at best and in reality the State's reaction has been contemptuous of the problem. In early 1984, as part of the RI/FS process, USEPA proposed to perform a plot study on several of the affected properties to determine the feasibility of excavation and to develop, on a smaller scale, problems with the excavation process rather than wait to discover problems until the major project begun. Under USEPA's proposal, the State of New Jersey was to provide a storage site. The State proposed the West Orange Armory as the storage site but dropped the plan after it was opposed by the local citizens.

After New Jersey failed to provide a disposal site, USEPA dropped the pilot plan. In 1985, a gubernatorial election year in New Jersey, the State proposed to implement the pilot program itself and remove the material to the low-level radioactive waste site in Beatty, Nevada. The New Jersey Legislature appropriated 8 million for this purpose. Proposals were put out, bids were received and a contract was let. Residents whose homes were to be excavated were advised that they would be out of their homes for six to eight weeks while the excavation and removal were taking place. The State began to excavate the material first in Glen Ridge and set up a staging area in Kearny, New Jersey. When the excavation reached Montclair, New Jersey officials were advised by the State of Nevada that New Jersey did not have the necessary permits and that no material would be accepted in Nevada. The State of New Jersey took two steps in response to Nevada's actions. First of all, it instituted a suit in United States District Court in Nevada to force acceptance of the material. This suit was dismissed, as under the United States Constitution the Supreme Court of the United States has exclusive jurisdiction over suits between two states. A proceeding is now ongoing in the Supreme Court under the auspices of a special master.

The second action of the State of New Jersey was truly bizarre. The State doubled the size of the crew excavating the material and filled up virtually every square inch of space on the Montclair properties with approximately 5,000 containers of the radioactive soil.

In late 1985 the Township on its own behalf on behalf of the displaced residents, instituted an action to compel the removal of the radioactive containers. Initially, the court ordered the State to submit its alternatives for removal of the containers. When the report was submitted, it was obvious that the State had no plan.

During the course of discovery in the litigation, Montclair focused on two fundamental issues. First, we were concerned with potential problems in moving the material elsewhere. The State steadfastly maintained that the removal, transport, storage and disposal of the material elsewhere posed no environmental problem. Our second area of concern was with proposed storage or disposal locations. We specifically asked about the West Orange Armory, the Kearny staging area and the BOMARC site at McGuire Air Force Base, which had been the site of a nuclear weapons fire approximately 25 years ago. As to the site, which is an industrial site where New Jersey Transit planned to build and where some 10,000 drums were already stored, the State acknowledged that more storage area was available which it chose not to use because of New Jersey transit's construction schedule. The State acknowledged that the West Orange Armory posed no environmental problems and that it was dropped because of local opposition. As to McGuire Air Force Base, the State said that it did not wish to mix the low-level waste with the more radioactive waste at McGuire.

Based upon the state's representation and the clearly inappropriate storage in Montclair, residents are displaced, others are living within seven feet of the containers and the manner of storage constitutes a fire and traffic hazard, Montclair moved for Summary Judgment to compel removal of the barrels. While the Summary Judgment motion was pending in June of 1986, the State announced its intention to remove the barrels and soil to Vernon, New Jersey and mix the radioactive soil with clean soil. Various parties sued to enjoin the State's movement of the materials.

After the suits were to enjoin the movement of the barrels and the soil blending, Commissioner Dewling requested a meeting with the Mayors of Glen Ridge, Montclair and West Orange I attended that meeting. The Commissioner assured us that the Vernon Plan was environmentally sound and asked the towns to intervene in the lawsuit and support NJDEP's position. Montclair did intervene, however, we felt the State's position was legally untenable. The State's own papers indicated that the blending would not begin for several months. Montclair asked the courts to allow movement of the barrels and accelerate disposition of the appeal. The Appellate Division of the Superior Court and the Supreme Court of New Jersey ultimately adopted Montclair's position in July of 1986.

Still, the barrels did not move. NJDEP ultimately withdrew the Vernon proposal in December of 1986, after which Montclair renewed its Summary Judgment motion to compel removal of the barrels. The Honorable Murray Simon, J.S.C., found the storage of the barrels to be a nuisance and ordered the State to begin removal of the barrels by May 15, 1987. The State has represented that it is not going to appeal Judge Simon's Order, so it appears that the agony of the displaced residents may finally be on its way to ending. The State has not said, however, where it will be moving the material.

At the beginning of my testimony, I stated my belief that the State of New Jersey's primary concern has been politics, rather than the physical and psychological health of Montclair's residents. I would cite six events in support of my belief. First of all, I would point to the BOMARC disaster. The potential of using the BOMARC site as a storage site for all material was first mentioned in late June of 1985 at a meeting in New York between USEPA officials and then Commissioner Hughey. On July 1, 1985, the administration held a news conference announcing the "discovery" of the BOMARC site and demanding its immediate cleanup.

Contemporary newspaper accounts mentioned the USEPA-Hughey meeting as to how the BOMARC site was "discovered." Subsequent newspaper accounts documented that NJDEP and local residents had known about the site for years and that NJDEP had been monitoring the site. Given the proximity of the meeting and press conference and the total lack of investigation by the Administration over what NJDEP knew about the site, I can conclude only that the purpose press conference was to perform a pre-emptive strike on the use of BOMARC as a storage site.

The second event is the handling of the Kearny situation. In depositions, Deputy Commissioner Catania admitted that more area was available in Kearny than was being used. Newspaper accounts in the fall of 1985 show that the Governor, in a campaign appearance in Kearny, promised that no more barrels would be moving to Kearny. The third event is the public hearing on the RI/FS in October of 1985, less than one month prior to the election presided over by Regional Administrator Christopher Daggett, a former aide to the current Administration, at which Administrator Daggett announced that the permanent storage site would not be in Glen Ridge, Montclair or West Orange, but did not identify any storage or disposal location. The record of decision in this case still remains open due to lack of a disposal site. The fourth and fifth events are the dropping of the West Orange Armory and Vernon because of public opposition despite NJDEP's protestations that its plans were safe. Finally I point to the State's response to our Summary Judgment. The State pointed to the necessity of following its Blue Ribbon siting process, unless Glen Ridge, West Orange or Montclair would propose a site. If any of the municipalities proposed a site the State said removal of the barrels could begin immediately.

In closing, I would simply point out to the committee that the situation in Montclair today is in significant respects worse than the situation was in 1983 when CDC issued its health advisory. I have alreaddy told you about the displaced residents. In addition, CDC very recently issued an additional health advisory which discussed long-term effects of alpha and gamma radiation and advised affected people not to eat fruits and vegitables grown in their gardens. In response to this admitted health crisis, the current response of the State has been to appoint a blue-ribbon panel of laymen to find a disposal site. The panel, in my opinion, is a completely unjustifiable response and is yet another example of the State's treatment of this issue as a political problem and not the public health and environmental catastraphe that it is.

The problem of political manipulation of the process is inherent in the super fund process, in my view, as long as the states must provide 10 per cent funding and the state and federal governments must agree on a remedy. I would simply ask the

Committee to investigate my allegations, get the State and Federal governments together and require them to explain how they are going to solve the disposal problem. The public interest and the health, safety and welfare of the people of Montclair demand it.

Thank you.

MARAZITI, FALCON & GREGORY
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April 23, 1987

Senator Frank R. Lautenberg, Chairman,
Subcommittee on Superfund and Environmental
Oversight of the Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510

RE: Extension of Testimony before Subcommittee on Superfund and Environmental Oversight of the Committee on Environment and Public Works

Dear Senator Lautenberg:

Because I was a late addition to the panel at the Field Hearing held on April 14, 1987, at the New Jersey Institute of Technology, I did not have the opportunity to prepare written testimony. I would like to take this opportunity to summarize my thoughts on the subjects I addressed at the Hearing and two others which I did not address at that time.

At the outset, I wish to again acknowledge and thank you, Mr. Chairman, for the aggressive commitment you have so often demonstrated to the effort to clean up the environment. The work that you and your staff accomplished within very short time frames to preserve and expand the rights of municipalities to respond on their own to environmental disasters within their jurisdictions, was not only impressive but was also successful. The CERCLA Amendments (SARA) have strengthened the tools and expanded the roles of municipalities in this important effort.

DEP - EPA DELAY ON CLEANUP AT PEPE FIELD

Like so many other areas throughout the state and nation, the Town of Boonton has experienced the frustration and impatience resulting from the lack of aggressive response by the Federal and State agencies to the identified contamination at the Pepe Field Superfund site in Town. The site was included on the first publication of the National Priority List in December, 1982. For reasons unclear to officials of the Town of Boonton, the Remedial Investigation Feasibility Study (RI/FS) has not yet been completed for this site. It is our understanding that DEP, the lead Agency for Pepe Field, undertook the procurement of its contractor and assigned this project some time in early 1985. The information that we have informally received is that the draft documents have been returned to the contractor on more than one occasion because of the deficiencies in the submittals. The site, which is a three and a half acre neighborhood park located in the middle of a built-up residential area, has been closed to the public for years. The only temporary emergency measures taken to protect the public health and the environment have been taken at the initiative and expense of the Town of Boonton.

Litigation instituted by Boonton in 1983 to recover the cost of cleanup and damages to the natural resources from the responsible party has been administratively terminated and awaits the completion of the RI/FS. Either party may move to restore the case to the calendar upon the completion of the study. At the time that the parties consented to this action it was anticipated that the RI/FS would be completed within approximately one year. More than two years have now expired. It is our judgment that the completion of the reports is still a long way off.

NATURAL RESOURCE DAMAGES

SARA reemphasizes the Congressional interest in providing opportunities for the recovery of compensation for the residual damage which remains after the cleanup of contaminated sites. The legislation requires the selection at both the Federal and State level of natural resource trustees. Such trustees have important and far reaching powers and responsibilities. Not only will they be empowered to bring actions to recover money damages from polluters, but they will also be charged with the responsibility of determining how those recovered funds will be spent to restore the environment. Such trustees must also be included in the settlement discussions that occur between the enforcement arm of EPA or State agencies and potentially responsible parties (PRPs). As mentioned earlier, your personal efforts in preserving the rights of municipalities to act as natural resource trustees, in particular cases, is much appreciated by Boonton and is of great benefit to municipalities and local governments across the country.

One of the difficulties which I would like to call to the attention of the Subcommittee in this regard, however, relates to the methods of assessing such damages. Recently the Department of Interior adopted Regulations at 51 Fed. Reg. 27674 (1986). The procedures have been criticized as undervaluing the natural resource damages. The development of more realistic and effective methodologies to calculate natural resource damages should be strongly promoted. This Subcommittee's inquiry into the implementation of the natural resource trustee program, including the status of the appointment of such trustees by the several states, would doubtlessly greatly accelerate the process.

GROUNDWATER CLEANUP STANDARDS

Efforts to relax groundwater cleanup standards should be vigorously resisted. The long-term impact on human health of exposures to even minute concentrations of hazardous substances is still unknown to the scientific community. Reliable information on the effect, over normal lifetimes, of exposure to these chemical substances is not available. The phenomenon of groundwater contamination is largely a byproduct of the post World War II period. Therefore, empirical data from populations which have been exposed to such substances over a long enough time frame does not exist in sufficient quantity or details. Moreover, research into the synergistic effects of mixtures of even very low concentrations of various substances is only just beginning. We really don't know what the cumulative effect or the effect in combination of these chemicals can be.

The debate about the health risk of exposure to low level concentrations of hazardous substances often centers on the carcinogenic effect. This analysis of the risks to the human population is too narrow. Animal studies clearly demonstrate that such substances also seriously damage vital bodily organs such as the heart, lung, liver and kidneys. The mutagenic and tetragenic effects of such exposures are also to be carefully considered in establishing broad national policies on the subject.

While the concern about the impact of residual contamination on public health should be the driving force behind the decision making process in arriving at acceptable groundwater cleanup standards, there is also a financial issue to be considered as well. While it is often argued, by private sector responsible parties, that the cost of cleanup to zero levels is prohibitively high, this argument fails to recognize the increased importance given in SARA to the natural resource damage recovery process. The action forcing provisions in SARA, which require the appointment of natural resource trustees at both the Federal and State level presages an intensified focus on these provisions of the Act. Inasmuch as natural resource damages are designed to compensate the public for the residual damage to the environment, after cleanup mechanisms have been completed, the presence of even low levels of contamination in groundwater will arguably give rise to a claim for natural resource damage recovery. Such claims may equal or exceed the cost of complete cleanup in the first place. Thus, in addition to the moral concern about eliminating damage to human health, a financial motive for insisting on stringent cleanup standards exists as well.

REIMBURSEMENTS TO LOCAL GOVERNMENTS

SARA provides new language which authorizes reimbursement to local governments for necessary and appropriate expenditures to eliminate or mitigate threats to public health and the environment. This is an extremely important aspect of the legislation because it provides a mechanism for quicker responses in emergency situations. The history of the program has demonstrated that the Federal and State agencies are slow to respond. Local pressures from concerned citizens often force the burden of immediate response on the local governing officials. The reimbursement provision addresses this reality. Unfortunately, EPA has not yet published the regulations which would guide the implementation of this program. Efforts should be made to accelerate the process of setting in place the mechanisms required to implement this important grant program.

Although the regulations have not yet been implemented, the Town of Boonton has filed a Petition seeking reimbursement of the expenses that it has incurred in responding to the contamination at Pepe Field over the years. Enclosed is a copy of the Petition filed by the Town of Boonton on March 11, 1987. To date, no response has been received from EPA to this request.

TECHNICAL ASSISTANCE GRANTS

During the Field Hearing you articulated the importance of technical assistance grants to local groups in evaluating the proposed response to the contaminated condition of a particular site. It is indeed absolutely essential that the persons most intimately affected by the contamination have the financial means to intelligently review and comment upon the proposed remedy. The recognition of the importance of this capability must extend, not only to local citizens groups, but also to the governing bodies of municipalities affected by the site as well. Although the statutory language in SARA does not explicitly refer to applications by local governing bodies, it is clear that the purpose and intent of SARA is to be extremely "friendly to municipalities." Accordingly, the Town of Boonton intends to file an application for a technical assistance grant. The proposed rules which are being developed at the present time by EPA should incorporate provisions which encompass the municipal governing body within the ambit of potential applicants for such technical assistance grants.

Once again I wish to thank you for your vigilent concern about environmental quality and the opportunity to express these views.

Very truly yours,

MARAZITI, FALCON & GREGORY

Joseph J. Maraziti, Jr.

JJM/bz
enc.
cc: Mayor and Board of Aldermen
of the Town of Boonton
Fletcher N. Platt, Jr., P. E.

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

PEPE FIELD	:	PETITION FOR REIMBURSEMENT
TOWN OF BOONTON	:	UNDER SECTION 123 OF THE
COUNTY OF MORRIS	:	SUPERFUND AMENDMENTS AND
STATE OF NEW JERSEY	:	REAUTHORIZATION ACT OF 1986
R-584-8-84-1	:	

TO LEE M. THOMAS, Administrator of the U.S. Environmental Protection Agency:

THE PETITION of the Mayor and Board of Aldermen of Boonton, a municipal corporation organized under the Laws of the State of New Jersey, respectfully shows that:

1. In the early 1970's the Town of Boonton acquired a 3.5 acre site, located on Wootton Street in the Town of Boonton, which was, with the financial assistance of the New Jersey Green Acres Program, developed into a playground and recreation area later known as Pepe Field.

2. On December 20, 1982, the United States Department of Environmental Protection (EPA) issued the National Priorities List of 418 hazardous waste "Superfund" sites as provided by 42 U.S.C. Section 9605 (8)(B) (CERCLA). Pepe field was one of the 65 New Jersey sites on the List.

Site Evaluation Study

3. At the request of The New Jersey Department of Environmental Protection, and in recognition of its role as both owner of the land and protector of the health and welfare of the Town's inhabitants, Boonton conducted a site evaluation study. The Site Investigation Summary was completed by Elson T. Killam Associates, Inc., Environmental and Hydraulic Engineers, on March 14, 1985.

4. The work performed under the direction of E.T. Killam consisted of digging test pits, to the depth of seven(7) feet, soil and groundwater sampling and analysis, and a terrain conductivity survey. The Mayor and Board of Aldermen of the Town of Boonton have expended a total of $36,706.07 for the DEP directed services of Killam and the analysis of samples performed

by Environmental Testing and Certification Laboratories and Garden State Laboratories.

5. In accordance with Section 123 of the Superfund Amendments and Reauthorization Act, local community authorities are entitled to reimbursement for expenses incurred in carrying out temporary emergency measures necessary to prevent or mitigate injury to human heath or the environment associated with the release of any hazardous substance. Immediate response was not only required at the local level, but ordered by the Department of Environmental Protection.

6. Section 123(c) of SARA limits the amount of reimbursement to $25,000.00 per response and accordingly, the Mayor and Board of Aldermen of the Town of Boonton petitions the Environmental Protection Agency for reimbursement toward the expenses incurred by Boonton for a Site Evaluation Study in the amount of $25,000.00.

On Site Treatment Facility

7. Boonton also operates a treatment facility at the southeast corner of Pepe Field to apply hydrogen peroxide to the subsurface water which is collected through an underground drainage system. The treated water is then discharged into the storm drain system and flows off-site.

8. Construction and maintenance of the on-site subsurface water treatment facility has required the Town of Boonton to expend $7,500.00 to ensure the public health.

9. In accordance with Section 123(c) of SARA the Town of Boonton petitions the Environmental Protection Agency for reimbursement of $7,500.00 expended in emergency measures to prevent injury to human health and the environment.

Monitoring and Operation of On Site Treatment Facility

10. Town employees monitor the subsurface water treatment facility on a daily basis, including weekends, to be certain that it is functioning properly and to add chemicals as needed. Hydrogen peroxide is supplied to said facility to combat the odor eminating from the contaminated site. Such supplies have required the Town of Boonton to expend $59,516.15 to date in emergency measures to prevent injury to human health and the environment.

11. In accordance with Section 123(c), the Town of Boonton petitions the Environmental Protection Agency for reimbursement in the amount of $25,000.00 for such emergency measures.

On Site Drainage System

12. As a necessary measure, the Town of Boonton constructed a drainage system on the site so that the polluted subsurface water would collect in an underground basin for treatment. This emergency measure required the Town of Boonton to expend $5,000.00.

13. In accordance with Section 123(c), the Town of Boonton petitions the Environmental Protection Agency for reimbursement in the amount of $5,000.00 for such emergency response.

Fencing

14. In an effort to prevent the Town's inhabitants from coming into contact with the contaminated area of Pepe Field, the Mayor and Board of Aldermen resolved on May 7, 1984 that emergency fencing and warning signs be posted in the immediate area.

15. The emergency fencing of the 3.5 acre area and the posting of warning signs required the Town to expend approximately $800.00.

16. In accordance with Section 123(c) of SARA, the Town of Boonton petitions the Environmental Protection Agency for reimbursement in the amount of $800.00.

Conclusion

Petitioner therefore seeks reimbursement in the amount of $63,300.00 as above enunciated, pursuant to the provisions of Section 123 of the Superfund Reauthorization Act of 1986.

I certify that the foregoing statements made by me are true. I am aware that if any of the foregoing statements made by me are wilfully false, I am subject to punishment.

Dated:
March 11. 1987

Joseph J. Maraziti, Jr., Esq.
Attorney for the Mayor and
Board of Aldermen of Boonton
Petitioner

SUBJECT: BURNT FLY BOG

I would like to thank the committee for the opportunity to place, into the Congressional Record, my opinion concerning the Burnt Fly Bog, its cleanup and the problems that ensured during this ongoing process.

The Bog serves as an example as to why the Superfund of $7 Billion will, in my opinion, be grossly inadequate to address the Superfund sites, and those toxic waste dumps yet to be discovered in The United States.

I would like, at the end of the discussion concerning the Bog, to make suggestions as to what might be some of the corrective measures that could be instituted from a cost control standpoint with regard to the Bog and possible other toxic waste sites.

The Bog is an interesting experience for us all. From the beginning, there were problems with regard to the original Dames and Moore Feasibility Study which was funded at approximately $350,000. This study was inadequate in its projections as to what would be necessary, as far as the design plan, for the cleanup of the Bog. It also, initially, did not cover the westerly wetlands which I had personally requested the Monmouth County Health Dept. to do initial test pourings which, as a result, in a DEP examination of this additional site, because of the nature of the Bog, might conceivably be, conservatively $60 Million to clean up.

The design plan of the cleanup which was a result of the Dames and Moore Feasibility Study was grossly underestimated from a cost factor. In phase one planning, in planning monies there was projected approximately $2.5 Million, of which approximately $400,000 was administrative costs. As a result of our private conversation with the field contractor and the two DEP Field Representatives and our own questions concerning the Dames and Moore Study, the cost has subsequently turned out to far exceed the $2.5 Million which eventually was expanded to include parts of Phase II, as I understand it.

The problem in dealing with Phase I at the site was that it was discovered that greater concentrations of toxic wastes, that is PCBs, arsenic, lead, etc. were found at the asphalt mountain which almost tripled the cost of removal per barrel; as I can best recall, the cost went from $105 to $260 per drum. This geometrically impacted the cost factor of the cleanup.

It turned out, with regard to the lagoons, the sludge at the bottom almost doubled or tripled in the thickness that was originally estimated in the Feasibility Study. In addition, the water content within the lagoon was higher than originally estimated, and was filling up as a result of natural elements involved.

In August, a month before final filing for additional funds to address some of the problems that we had spoken about to the DEP, and that I had brought up at a Public Hearing in Marlboro Township, at which Dr. Sadat was present, the attitude of the officials was that there was enough time and the money would be unlimited as to some of the points I had raised. Of course, this has proved to be otherwise, because what followed was that the site was closed down and then eventually picked up again sometime later with the restructuring of the funds to be allocated to the site.

Today, the Bog, I would like to believe, is on the right track. I feel strongly that the amount of monies that are allocated may not be enough and that the westerly wetlands is a critical issue to be addressed.

The conclusions that I have reached with regard to the Bog, and its application to the national picture, are the following:

When feasibility studies are done, they should be conducted by firms that are strictly scrutinized so that they are capable of gathering all of the data with regard to the site in question. In addition, these should be contingency funds made available to be controlled by government officials so that when additional data is required, a) at the site and b) off site new areas or adjacent, the feasibility study could be expanded.

Of course, this raises the question of whether or not someone would low bid the site and then expand the feasibility work as a result of allegedly discovering new areas. To prevent this, incorporated in the bids should be certain types of requirements that call for projection of possible additional work that might be done as a result of unforeseen difficulties or discoveries at the site that could be projected based on rough sampling techniques of the overall site and surrounding areas when the contractor is submitting his bid to do the Feasibility Study.

The problem seems to be that specific sites are isolated and there is no regard given to the site that can be adjacent to the specific area which brings to mind an additional point . . . it might be cost effective in overall examination and design studies, that satellite concepts be developed, which I have written to various congressmen in the past. To me, it makes economic sense, in the interest of cost effectiveness, that when a site is designated and it is obvious that there are adjacent sites within the work area, that if all of the sites are studied together and an overall design plan to clean up the sites and considered, certain types of duplicated administrative costs and physical work in the area's set up and preparation would be eliminated as a result of treating a whole area as one particular site.

One begins to get the feeling that the rifle approach at a site, as opposed to the shotgun approach, when an area has multi-toxic wastes, is being taken by the government to minimize the expenditure for cleanup, but in reality it is wearing blinders to the overall problem. In other words, a tunnel vision approach.

It is recommended that to get a fix on what is really the projected cost factor for the Superfund cleanup, one would want to take a sampling of major sites across the United States, factor in minor sites and then project the overall costs to do the cleanups. I personally believe that New Jersey alone would probably need $2 to $3 Billion.

One avenue to address that could be instituted by Congress might be to set up each of the major sites as a separate line item that would require the EPA and their State counterparts, the DEPs, to work on this basis. The cost overruns on some of the site work, such as chemical control, are horrendous and it seems to me that the fault goes back to the original feasibility studies.

With regard to the personnel at the DEP, basically we found there were two types . . . those that were, in our opinion, genuinely concerned about the progress at the site and, I personally believe, saw some of the problems that we did but were unable to speak out; the other individuals were those that added to the malaise of red tape that resulted in inaction.

As to the original contractor for Phase I, Aguilar, I must say that he had, as I understand it, considered it the best study conducted under the circumstances, and was responsible, I feel, for discussing some of the problems that existed at the site as a result of the Dames and Moore Feasibility Study. I have recommended many times to DEP that lawsuits be instituted against Dames and Moore to recover monies for that Feasibility Study.

In closing, I would like to state that there are many well intentioned people in key positions who are trying to do their jobs at these agencies, but their hands are tied. I also feel that, based on the experience of the Bog and the cost overruns as a result of the inadequate Feasibility Study, the overall national picture might require as much as $30 Billion to address the sites around the United States. The Federal Government might want to look at a bonding process to handle this type of expenditure.

I would like to thank Senator Lautenberg for allowing me to transmit, through my secretary, this dictation. If there are any errors with regard to the stated figures, to the best of my knowledge, they are placed on the record as a point of illustration. The actual figures should be examined closely and they will bear out the statements I have made.

Please excuse any errors as this was dictated long-distance to my secretary who will sign my name and send this to you Federal Express.

SAUL G. HORNIK,
Mayor, Marlboro Township.

STATEMENT OF
CHRISTOPHER J. DAGGETT
REGIONAL ADMINISTRATOR FOR REGION II
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT
OF THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

FIELD HEARING
NEWARK, NEW JERSEY
APRIL 14, 1987

MY NAME IS CHRISTOPHER J. DAGGETT. I AM REGIONAL ADMINISTRATOR FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION II. THIS REGION INCLUDES THE STATES OF NEW JERSEY AND NEW YORK, THE COMMONWEALTH OF PUERTO RICO AND THE UNITED STATES VIRGIN ISLANDS.

I APPRECIATE THE OPPORTUNITY TO REVIEW WITH YOU REGION II'S EXPERIENCE IN CARRYING OUT THE SUPERFUND PROGRAM, BOTH UNDER THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA) AND UNDER THE RECENT SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA). AS REQUESTED BY THE SUBCOMMITTEE, I WILL FOCUS MY TESTIMONY ON OUR ACTIVITIES IN NEW JERSEY.

NEW JERSEY HAS MORE SITES ON THE NATIONAL PRIORITY LIST FOR SUPERFUND THAN ANY OTHER STATE -- 100. THIS FACT CAN BE ATTRIBUTED NOT ONLY TO THE PREVALENCE OF THE CHEMICAL INDUSTRY IN NEW JERSEY, BUT ALSO TO THE STATE'S POLICY OF AGGRESSIVELY SEEKING OUT AND IDENTIFYING CANDIDATE SITES FOR THE LIST.

EPA REGION II AND NEW JERSEY'S DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) HAVE DEVELOPED WHAT I CONSIDER TO BE AN EFFECTIVE PARTNERSHIP IN DEALING WITH THESE SITES. THE FOLLOWING FACTS, WHICH ARE EXPANDED IN DETAIL IN THE ATTACHMENTS TO THIS TESTIMONY, WILL ILLUSTRATE OUR WORK TOGETHER WITH THE STATE.

TO DATE, EPA AND DEP HAVE COMPLETED PRELIMINARY ASSESSMENTS ON 1015 SITES IN NEW JERSEY, OUT OF AN INVENTORY OF 1275 POTENTIAL SITES. THESE HAVE LED TO 420 SITE INVESTIGATIONS, WHICH IN TURN HAVE PRODUCED THE 100 NPL SITES.

SO FAR, SOME KIND OF STATE OR FEDERAL ACTION IS UNDERWAY AT 95 OF THOSE 100 SITES. THIS ACTION PROGRESSES THROUGH SEVERAL STAGES: A REMEDIAL INVESTIGATION, A FEASIBILITY STUDY OF REMEDIAL ALTERNATIVES, A RECORD OF DECISION WHICH SELECTS THE REMEDY, A DETAILED DESIGN OF THAT REMEDY, AND, FINALLY, IMPLEMENTATION OF THE REMEDY.

THE SITES ARE CATEGORIZED AS EITHER STATE OR FEDERAL LEAD, AND AS EITHER FUND OR ENFORCEMENT LEAD. ENFORCEMENT LEAD SITES ARE THOSE WHERE WE HAVE IDENTIFIABLE RESPONSIBLE PARTIES WITH WHOM WE NEGOTIATE TO CARRY OUT THE WORK.

THE PLANNING PROCESS USED TO TRACK AND ADMINISTER THIS PROCESS CONSISTS OF THE ANNUAL DEVELOPMENT, IN CONSULTATION WITH THE STATE, OF A SUPERFUND COMPREHENSIVE ACCOMPLISHMENT PLAN, OR SCAP. THE SCAP SETS FORTH ON A QUARTERLY BASIS THE SCHEDULE OF ACTIVITY AND THE BUDGET TO BE OBLIGATED FOR EACH SITE. THE SCAP FOR FISCAL YEAR 1987 IN NEW JERSEY IS APPENDED.

SO FAR, SINCE SUPERFUND WAS FIRST PASSED IN 1980, EPA HAS OBLIGATED APPROXIMATELY $147 MILLION FOR WORK AT NEW JERSEY SITES. IN ADDITION, THROUGH ENFORCEMENT ACTIONS, EPA HAS REACHED AGREEMENTS COVERING OVER $30 MILLION IN PRIVATE PARTY MITIGATION.

UNDER SUPERFUND, 82 REMEDIAL INVESTIGATION/FEASIBILITY STUDIES ARE EITHER COMPLETED OR UNDERWAY, WHILE 13 SITES ARE BEING ADDRESSED UNDER OTHER AUTHORITIES, SUCH AS STATE WATER AUTHORITIES; WE HAVE COMPLETED 27 RECORDS OF DECISION AT 25 SITES (A ROD IN SOME CASES MAY COVER ONLY PART OF THE FULL REMEDY). REMEDIAL

DESIGNS AS NEEDED ARE UNDERWAY OR COMPLETED FOR 22 SITES, AND WILL START SHORTLY AT THE OTHER THREE; AND SOME FORM OF REMEDIAL ACTION HAS BEEN COMPLETED OR IS UNDERWAY AT 13 OF THESE. THE REMAINING REMEDIAL DESIGNS ARE SCHEDULED FOR COMPLETION OVER THE NEXT YEAR AND A HALF.

A QUESTION THAT CREATES MUCH MISUNDERSTANDING IN THE SUPERFUND PROGRAM IS HOW MANY SITES HAVE WE ACTUALLY "CLEANED UP"? THERE IS USUALLY A SIGNIFICANT GAP BETWEEN THE COMPLETION OF A REMEDIAL ACTION AND THE POINT WHERE WE CAN SAY A SITE CAN BE DELETED FROM THE NPL. THE REASON IS THAT YEARS OF SITE PUMPING AND MONITORING MAY BE REQUIRED TO ENSURE THAT THE REMEDY IS PERFORMING AS DESIGNED. DURING THAT TIME, BY LAW, WE CANNOT DELETE THE SITE FROM THE NPL.

IN NEW JERSEY, FOR EXAMPLE, WE HAVE SO FAR DELETED ONLY ONE SITE. THIS WAS THE FRIEDMAN PROPERTY IN OCEAN COUNTY, WHERE, BASED ON INVESTIGATION AND FULL PUBLIC REVIEW, EPA AND DEP AGREED THAT NO ACTION WAS REQUIRED.

A SECOND SITE, KRYSOWATY FARM IN HILLSBOROUGH TOWNSHIP, IS NOW IN THE DELETION PROCESS. EXCAVATION AND REMOVAL OF THE WASTE MATERIAL AND INSTALLATION OF A NEW WATER SUPPLY FOR THE SURROUNDING COMMUNITY WERE COMPLETED IN EARLY 1986. WE ANTICIPATE THE DELETION PROCESS WILL BEGIN SHORTLY. IT INCLUDES A DELETION ANALYSIS AND AN OPPORTUNITY FOR FULL PUBLIC COMMENT.

ANOTHER IMPORTANT PIECE OF THE CLEAN UP PICTURE IS EPA'S SUPERFUND REMOVAL PROGRAM. THIS IS AN AUTHORITY SEPARATE FROM THE REMEDIAL PROGRAM AND IT MAY BE USED AT SITES WHERE AN IMMINENT THREAT TO THE PUBLIC HEALTH OR ENVIRONMENT EXISTS, WHETHER OR NOT THE SITE IS ON THE NPL. IN THE REMOVAL PROGRAM, WE CAN MOVE QUICKLY TO ABATE THE THREAT WITHOUT WAITING FOR THE FULL DELIBERATE PROCESS OF THE REMEDIAL PROGRAM TO BE COMPLETED. SUBSEQUENT ACTION UNDER THE REMEDIAL PROGRAM MAY OR MAY NOT BE REQUIRED.

A RECENT EXAMPLE OF A REMOVAL ACTION IN NEW JERSEY IS THE INDUSTRIAL LATEX SITE IN WALLINGTON. THIS ABANDONED INDUSTRIAL FACILITY HAD DRUMS AND UNDERGROUND TANKS CONTAINING MATERIAL CONTAMINATED WITH PCBs AND VOLATILE ORGANICS. AT THE REQUEST OF DEP, REGION II WAS ABLE TO MOVE IN QUICKLY AND REMOVE THIS MATERIAL FOR DISPOSAL BY INCINERATION OR LANDFILLING AT A COST OF NEARLY $2 MILLION OVER A SPACE OF ONLY A FEW MONTHS. TODAY, THE IMMEDIATE THREAT FROM INDUSTRIAL LATEX HAS BEEN ELIMINATED. WE ARE NOW RANKING THE SITE AND IF IT IS PROPOSED FOR THE NPL, WE WILL INVESTIGATE IT FURTHER TO SEE WHETHER SIGNIFICANT SUBSURFACE CONTAMINATION STILL EXISTS, AND WHETHER OR NOT THE SITE IS THE CAUSE OF CONTAMINATION IN THE WALLINGTON PUBLIC WATER SUPPLY.

SINCE SUPERFUND BEGAN, EPA HAS SPENT OVER $8 MILLION ON MORE THAN 40 REMOVAL ACTIONS IN THE STATE OF NEW JERSEY.

WE WERE ASKED BY THE SUBCOMMITTEE STAFF TO ADDRESS SPECIFICALLY THE ISSUES RAISED LAST YEAR BY THE EPA INSPECTOR GENERAL'S AUDIT OF HOW COOPERATIVE AGREEMENTS BETWEEN EPA AND DEP UNDER CERCLA WERE ADMINISTERED BY THE STATE.

THE AUDITOR'S REPORT, WHICH IS DATED SEPTEMBER 30, 1986, RAISED A NUMBER OF ISSUES HAVING TO DO WITH THE TIMELY COMPLETION OF REMEDIAL INVESTIGATION/FEASIBILITY STUDIES AND WITH THE

DOCUMENTATION OF COSTS ASSOCIATED WITH THE PROJECTS. IN GENERAL, BOTH EPA AND DEP FOUND THE AUDITOR'S RECOMMENDATIONS TO BE BOTH ACCURATE AND CONSTRUCTIVE, AND A GOOD MANY OF THEM ARE BEING IMPLEMENTED.

FOR EXAMPLE, THE AUDITOR POINTED OUT THE DELAYS INHERENT IN THE STATE PROCUREMENT PROCESS. THIS IS A PROBLEM, I MIGHT ADD, THAT EPA HAS FACED IN OTHER STATES, INCLUDING NEW YORK.

DEP HAS CAREFULLY CONSIDERED A NUMBER OF WAYS TO STREAMLINE THE CONTRACTING PROCESS, TO PROVIDE STUDY FLEXIBILITY AND TO PROMOTE TIMELY COMPLETION. MOST SIGNIFICANTLY, DEP HAS DEVELOPED A TERM CONTRACT APPROACH WHICH INCLUDES A PREQUALIFIED LIST OF FIRMS. PROPOSALS ARE REQUESTED AND EVALUATED FROM THREE FIRMS, WITH ULTIMATE SELECTION BASED ON TECHNICAL AND COST CONSIDERATIONS. THIS PROCESS AND OTHER ADMINISTRATIVE CHANGES ARE EXPECTED TO REDUCE THE TIME NEEDED TO HIRE CONTRACTORS FOR THE RI/FS AND DESIGN WORK.

ALSO, TO BETTER DEAL WITH THE UNCERTAINTIES OFTEN ENCOUNTERED AT SUPERFUND SITES, DEP HAS DEVELOPED A TWO-PHASE RI/FS PROCESS. DURING THE FIRST PHASE, THE GENERAL SITE CHARACTERISTICS ARE IDENTIFIED, AND THEN USED TO BETTER DEFINE THE SPECIFIC INFORMATION NEEDED IN THE SECOND PHASE. EPA HAS ALSO ADOPTED A MORE ITERATIVE APPROACH FOR FEDERAL LEAD PROJECTS.

WITH RESPECT TO THE RECENTLY PASSED SUPERFUND AMENDMENTS, THERE IS NO DOUBT THAT SOME OF THE NEW REQUIREMENTS WILL LENGTHEN THE CLEAN UP PROCESS. HOWEVER, WE BELIEVE THE PROCESS WILL BE A BETTER ONE BECAUSE OF SUCH FEATURES AS THE

EMPHASIS ON PERMANENT CLEAN UP, AND THE ASSURANCE OF FULL STATE INVOLVEMENT AS WELL AS THAT OF THE PUBLIC AND RESPONSIBLE PARTIES.

THERE ARE OTHER ASPECTS OF SARA, HOWEVER, THAT SHOULD ENABLE US TO DO A SIGNIFICANT AMOUNT OF MITIGATION FASTER IN CERTAIN CASES. FOR EXAMPLE, THE EXPANDED REMOVAL, OR EMERGENCY, AUTHORITY -- UP TO $2 MILLION AND ONE YEAR DURATION, COMPARED WITH $1 MILLION AND SIX MONTHS -- SHOULD ENABLE US QUICKLY TO PERFORM MAJOR WORK AT MANY SUPERFUND SITES. WE ARE REVIEWING ALL NPL SITES FOR LIKELY CANDIDATES.

ANOTHER NEW APPROACH EPA IS EXPLORING IS THE ALTERNATIVE REMEDIAL CONTRACTING STRATEGY, OR ARCS, WHICH IS BEING PILOT TESTED IN TWO OTHER REGIONS. ARCS WILL DELEGATE CONSIDERABLY MORE AUTHORITY FOR CONTRACTOR SELECTION TO THE REGIONAL LEVEL, WILL INCREASE COMPETITION AMONG CONTRACTORS, AND WILL SET UP A POOL OF REGIONAL CONTRACTORS WITH EXPERTISE IN THE TECHNICAL ISSUES OF CONCERN TO THE REGIONS.

I WOULD LIKE NOW TO FOCUS MORE SPECIFICALLY ON REGION II'S EXPERIENCE WITH THE PROGRAM SINCE THE PASSAGE OF SARA.

IT IS WORTH NOTING THAT THE HIATUS EXPERIENCED LAST YEAR WHILE WAITING FOR CONGRESS TO PASS SARA RESULTED IN A SIGNIFICANT SLOWDOWN IN THE PACE OF THE SUPERFUND PROGRAM NATIONALLY AND IN THIS REGION. MOST OF THE SITE WORK WAS PUT ON HOLD OR DELAYED. HOWEVER, DESPITE THIS SLOWDOWN, WE WERE ABLE TO MAINTAIN A RELATIVELY HIGH LEVEL OF ACTIVITY IN NEW JERSEY BECAUSE THE STATE EXTENDED ITSELF TO ADVANCE STATE

FUNDS PENDING FEDERAL REAUTHORIZATION. NEW YORK ALSO DID SO.

BECAUSE THE LOSS OF MOMENTUM IN NEW JERSEY WAS MINOR, WE HAVE, SINCE THE PASSAGE OF SARA, BEEN ABLE TO ALLOCATE THE HIGHEST LEVEL OF FUNDING FOR ANY STATE TO NEW JERSEY'S SUPERFUND PROGRAM FOR FISCAL 1987 -- MORE THAN $80 MILLION, OR ABOUT 20 PERCENT OF THE NATIONAL REMEDIAL PROGRAM. WE HAVE ALREADY OBLIGATED $47 MILLION OF THESE FUNDS.

BEFORE THE END OF THE FISCAL YEAR IN SEPTEMBER, EPA AND DEP PLAN TO START FOURTEEN MORE REMEDIAL INVESTIGATION/FEASIBILITY STUDIES IN NEW JERSEY; WE HAVE TARGETED TEN RECORDS OF DECISION FOR SIGNING AND WE EXPECT TO START OR CONTINUE SIX REMEDIAL ACTIONS.

WITH RESPECT TO IMPLEMENTING THE NEW REQUIREMENTS OF SARA, ONE OF OUR FIRST TASKS IS TO IDENTIFY THE RANGE OF STATE AND FEDERAL STANDARDS THAT MAY APPLY TO SITE MITIGATIONS UNDER THE APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS, OR ARARS, TEST OF SARA. WE HAVE MET WITH THE DEP AND ASKED FOR COPIES OF ALL STATE STANDARDS THAT MIGHT APPLY. WE HAVE ALSO ASKED THE STATE TO IDENTIFY SITE SPECIFIC ARARS FOR UPCOMING RECORDS OF DECISION WHERE TIMING IS CRITICAL. WE HAVE RECEIVED FROM THE DEP AND ARE NOW REVIEWING THE FIRST GROUP OF PROPOSED ARARS.

IT IS WORTH NOTING THAT IN SELECTING REMEDIES AND SETTING MITIGATION TARGETS IN FY 1986, WE ATTEMPTED TO ANTICIPATE THE REQUIREMENTS OF SARA WITH RESPECT TO ARARS AND PERMANENT REMEDIES. WE WERE SUCCESSFUL IN DOING SO; AT THE METALTEC SITE IN FRANKLIN, FOR EXAMPLE, WE USED STATE ECRA GUIDELINES FOR A MITIGATION LEVEL, AND SELECTED A SOIL VOLATILIZATION REMEDY THAT IS BOTH INNOVATIVE AND PERMANENT.

ANOTHER IMPORTANT CONSIDERATION UNDER SARA IS TO ENSURE THAT ANY ACTIONS TAKEN UNDER OUR REMOVAL PROGRAM ARE CONSISTENT WITH THE REQUIREMENTS FOR LONG-TERM ACTION UNDER THE REMEDIAL PROGRAM. A RECOGNIZED GOAL IS THE PREFERENCE FOR PERMANENT DESTRUCTION TECHNIQUES WHERE POSSIBLE OR PRACTICABLE. THIS WILL RECEIVE SPECIAL EMPHASIS FOR LARGE SCALE REMOVALS AT NPL AND PROPOSED NPL SITES. TO ENSURE THIS CONSISTENCY, ALL REMOVAL ACTIONS NOW REQUIRE THE CONCURRENCE OF OUR REMEDIAL AND ENFORCEMENT BRANCH CHIEFS.

SARA ALSO SPELLS OUT A REQUIREMENT FOR FULL STATE INVOLVEMENT IN ALL SUPERFUND DECISIONS. THIS IS A CONCEPT ALREADY WELL ESTABLISHED IN REGION II. SINCE SUPERFUND BEGAN, MEETINGS HAVE BEEN HELD AT THE DIVISION DIRECTOR LEVEL WITH DEP ON A FREQUENT BASIS TO DISCUSS AND RESOLVE BOTH SITE-SPECIFIC AND OVERALL PROGRAMMATIC ISSUES. DEP COMMENTS ON ALL RECORDS OF DECISION AND OFTEN PARTICIPATES ACTIVELY IN THE BRIEFINGS I RECEIVE PRIOR TO SIGNING THEM.

WITH RESPECT TO THE AVAILABILITY OF STATE REMEDIAL FUNDS, NEW JERSEY, LIKE NEW YORK, HAS ESTABLISHED A LARGE TRUST FUND FOR ADDRESSING LOCALLY-IDENTIFIED HAZARDOUS WASTE SITES AND FOR PROVIDING THE NEEDED STATE MATCH FOR SUPERFUND.

UNDER TITLE III OF SARA, NEW JERSEY HAS NAMED A STATE PLANNING COMMISSION, BECOMING ONE OF THE FIRST STATES IN THE COUNTRY TO FORMALLY ESTABLISH THIS EMERGENCY RESPONSE CAPABILITY.

ANOTHER NEW REQUIREMENT UNDER SARA IS FOR HEALTH ASSESSMENTS TO BE PERFORMED AT ALL NPL SITES BY THE AGENCY FOR TOXIC

SUBSTANCES AND DISEASE REGISTRY (ATSDR), WHICH IS A COMPONENT OF THE CENTERS FOR DISEASE CONTROL (CDC) IN ATLANTA. THERE ARE TWO REGIONAL ATSDR REPRESENTATIVES ASSIGNED FULL TIME TO REGION II. OUR FIRST EFFORT HAS BEEN TO PRIORITIZE EXISTING AND FUTURE RECORDS OF DECISION, AND A NUMBER OF THESE HAVE BEEN TRANSMITTED TO ATSDR FOR REVIEW. IN REGION II WE HAVE AN EXCELLENT RELATIONSHIP WITH ATSDR AND HAVE USED ITS EXPERTISE AT A NUMBER OF SITES.

SARA ALSO CODIFIES PREVIOUS EPA PRACTICE IN COMMUNITY INVOLVEMENT. BOTH EPA AND DEP HAD ALREADY ESTABLISHED PROGRAMS OF OUTREACH AND CITIZEN INVOLVEMENT AT ALL SUPERFUND SITES UNDER CERCLA AND WILL CONTINUE THEM UNDER SARA. HOWEVER, SARA DOES ADD A SIGNIFICANT NEW DIMENSION WITH THE AUTHORITY TO PROVIDE TECHNICAL ASSISTANCE GRANTS TO COMMUNITY GROUPS AT NPL SITES.

I KNOW THAT MANY GROUPS ARE ANXIOUS TO AVAIL THEMSELVES OF THESE GRANTS AS SOON AS POSSIBLE. HOWEVER, SARA MAKES CLEAR THAT EPA MUST ESTABLISH REGULATIONS BEFORE THE PROGRAM CAN BEGIN. THERE ARE MANY DIFFICULT ISSUES TO BE RESOLVED WITH RESPECT TO THESE GRANTS. FOR EXAMPLE, WHO, OR WHAT GROUPS SHOULD BE ELIGIBLE TO RECEIVE THEM? WHAT ACTIVITIES SHOULD BE ELIGIBLE FOR FUNDING? UNDER WHAT CONDITIONS SHOULD EPA CONSIDER WAIVING THE $50,000 CEILING AND THE 20% MATCH REQUIREMENT? WHO SHOULD PROVIDE THE SUPPORT AND TRAINING

NEEDED FOR COMMUNITIES TO ADMINISTER THE GRANTS -- EPA STAFF, EPA CONTRACTORS, OR STATE STAFF? WHO SHOULD ADMINISTER THE PROGRAM -- EPA OR THE STATES? WHAT ROLE CAN MUNICIPALITIES PLAY IN THIS PROGRAM UNDER SARA?

EPA BELIEVES THESE ARE DIFFICULT ISSUES AND THAT THEY SHOULD BE RESOLVED THROUGH A PROCESS OF FULL PUBLIC DISCUSSION. THERE IS NOW A DRAFT ADVANCE NOTICE OF PROPOSED RULEMAKING CIRCULATING THROUGH EPA, AND WE HOPE TO PUBLISH IT THIS SPRING FOR PUBLIC COMMENT. THE AGENCY THEN EXPECTS TO PUBLISH AN INTERIM FINAL RULE THIS FALL, AFTER WHICH GRANTS CAN BE MADE. A CITIZENS GUIDANCE MANUAL IS ALSO IN PREPARATION, AND IS EXPECTED TO BE AVAILABLE THIS FALL AS WELL.

AGAIN, IN THIS AREA, REGION II WILL HAVE THE ADVANTAGE OF PRIOR EXPERIENCE. THIS REGION HAS ALREADY GIVEN A $50,000 GRANT TO THE COMMUNITY AT THE LIPARI SITE IN PITMAN, NEW JERSEY, THROUGH A PILOT PROGRAM UNDER CERCLA. THE COOPERATIVE AGREEMENT WAS AWARDED TO THE BOROUGH OF PITMAN ON JANUARY 16 OF THIS YEAR.

OUR EXPERIENCE AT LIPARI HAS BEEN ILLUSTRATIVE OF THE PROBLEMS I LISTED ABOVE. IT WAS NECESSARY FOR REGIONAL STAFF TO WORK CLOSELY WITH THE COMMUNITY TO MAKE SURE THE COMPLEXITIES OF FEDERAL GRANT REGULATIONS WERE MET IN THE APPLICATION. IT HAS ALSO PROVEN DIFFICULT TO ESTABLISH CLEARLY WHO WILL GIVE

DIRECTION TO THE TECHNICAL ADVISOR. OUR HOPE IS THAT THE EXPERIENCE AT LIPARI WILL MAKE THE PATH SMOOTHER WHEN THE FULL PROGRAM GETS UNDERWAY.

ANOTHER INNOVATIVE APPROACH REGION II HAS TAKEN TO HELP COMMUNITIES BEFORE THE GRANT RULE IS IN PLACE IS TO ENCOURAGE PRIVATE RESPONSIBLE PARTIES TO PROVIDE FUNDS DIRECTLY TO CITIZEN GROUPS. THIS CONCEPT IS INCLUDED IN A CONSENT AGREEMENT REACHED WITH REVLON, INC. FOR THE FRONTERA CREEK SITE IN PUERTO RICO. WE HAVE ALSO ENCOURAGED TALKS BETWEEN CIBA-GEIGY AND CITIZEN GROUPS IN TOMS RIVER, NEW JERSEY. A SIMILAR AGREEMENT APPEARS LIKELY AT THAT COMPANY'S COMPLEX AND CONTROVERSIAL SITE.

ANOTHER CHALLENGING PROBLEM EPA AND DEP HAVE ENCOUNTERED IS THE USE OF PUBLICLY OWNED TREATMENT WORKS (POTWs) FOR DISPOSAL OF PRETREATED LEACHATE STREAMS FROM SEVERAL SITES. THESE INCLUDE THE LONE PINE LANDFILL, THE GEMS LANDFILL, THE LIPARI LANDFILL, THE KRAMER LANDFILL, AND THE PRICE LANDFILL.

THIS REMEDY IS ATTRACTIVE FOR A NUMBER OF REASONS: IT IS FREQUENTLY COST EFFECTIVE THROUGH THE SIGNIFICANT CAPITAL COST SAVINGS REALIZED BY NOT HAVING TO BUILD A COMPLEX TREATMENT SYSTEM AT THE SITE; IT ELIMINATES ANY DISCHARGE OF WASTEWATER TO SURFACE WATERS NEAR THE SITE; AND IT USES EXCESS CAPACITY AT EXISTING POTWs AND TAKES ADVANTAGE OF TRAINED POTW PERSONNEL.

BEFORE ANY SUPERFUND LEACHATE WOULD BE SENT TO A POTW, IT

WOULD BE PRETREATED ON SITE AND SUBJECT TO A TREATABILITY STUDY TO MAKE SURE IT WAS COMPATIBLE WITH THE EXISTING POTW WASTE FLOW. THE RESULTING WASTE STREAM WOULD BE CONSIDERABLY LESS CONTAMINATED THAN MANY INDUSTRIAL WASTES ROUTINELY HANDLED IN POTWs.

HOWEVER, SEWERAGE AUTHORITIES HAVE OFTEN BEEN RESISTANT TO THE IDEA BECAUSE OF PERCEIVED PROBLEMS SUCH AS HAZARD TO THEIR WORKERS, DIFFICULTY WITH SLUDGE DISPOSAL, AND VOLATILE ORGANICS IN THEIR SEWERS AND PLANTS.

THEY ARE ALSO CONCERNED OVER ISSUES OF LIABILITY, INSURANCE AND INDEMNIFICATION, A PROBLEM COMPLICATED BY CONGRESSIONAL OMISSION OF POTWs FROM SARA'S CONTRACTOR INDEMNITY SECTION.

AT THIS POINT, AGREEMENT WITH THE LOCAL UTILITIES AUTHORITY APPEARS CLOSE ONLY AT THE PRICE LANDFILL SITE. AT THE OTHERS, THE CONDITIONS BEING IMPOSED MAY DESTROY THE COST EFFECTIVENESS AND DRIVE US TO THE REMEDY OF SURFACE WATER DISCHARGE AFTER TREATMENT ON SITE.

SARA ALSO SPELLS OUT FURTHER REQUIRMENTS FOR FEDERAL FACILITIES SITES ON THE NPL. SO FAR IN NEW JERSEY, THERE ARE THREE SUCH FACILITIES -- FORT DIX, THE NAVAL WEAPONS STATION AT EARLE, AND LAKEHURST NAVAL AIR ENGINEERING CENTER -- AND ANOTHER FIVE THAT ARE UNDERGOING HAZARD RANKING SYSTEM SCORING. WE EXPECT EVENTUALLY TO RANK ABOUT TWENTY MORE SITES. AT THE THREE EXISTING SITES ON THE LIST, REMEDIAL INVESTIGATIONS ARE EITHER COMPLETE OR UNDERWAY.

IT IS CLEAR MANY CHALLENGES FACE EPA AND DEP IN CARRYING OUT THE REQUIRMENTS OF SARA. A SPECIAL CHALLENGE FOR THE STATE WILL BE THE REQUIREMENT FOR EACH STATE TO IDENTIFY, BY OCTOBER OF 1989, SUFFICIENT HAZARDOUS WASTE DISPOSAL CAPACITY FOR A TWENTY YEAR PERIOD.

TO HELP ADDRESS THIS ISSUE, EPA HAS ESTABLISHED A WORKING GROUP AT THE NATIONAL LEVEL. THE AGENCY'S APPROACH IS INTENDED TO BE ONE OF REASONABLENESS -- WE WANT TO WORK WITH THE STATES TO ENCOURAGE THEM TO TAKE STEPS TO ASSURE THE CAPACITY IS AVAILABLE. THE WORK GROUP IS IN CONTACT WITH THE NATIONAL GOVERNORS ASSOCIATION, AND ALSO WITH SUCH STATE-SPECIFIC GROUPS AS NEW JERSEY'S HAZARDOUS WASTE SITING COMMISSION.

WITH RESPECT TO FUNDING LEVELS, EPA IS CONFIDENT THAT ENOUGH MONEY HAS BEEN ALLOCATED TO CARRY OUT THE PROGRAM PLANNED IN FISCAL 1987 IN NEW JERSEY.

HOWEVER, WE MUST REALIZE THAT MANY OF THE SITE MITIGATIONS WILL BE COMPLEX AND EXPENSIVE IN THE DESIGN AND ACTION PHASES. FOR EXAMPLE, THE BRIDGEPORT RENTAL AND OIL SERVICE SITE ALONE IS EXPECTED TO COST NEARLY $85 MILLION.

I THANK YOU FOR YOUR ATTENTION. I AND THE MEMBERS OF MY STAFF WHO HAVE ACCOMPANIED ME WILL BE PLEASED TO ANSWER YOUR QUESTIONS.

###

FUNDING FACTS

Funds obligated for Superfund work in New Jersey total $146,791,958 since the beginning of the program. This figure includes:

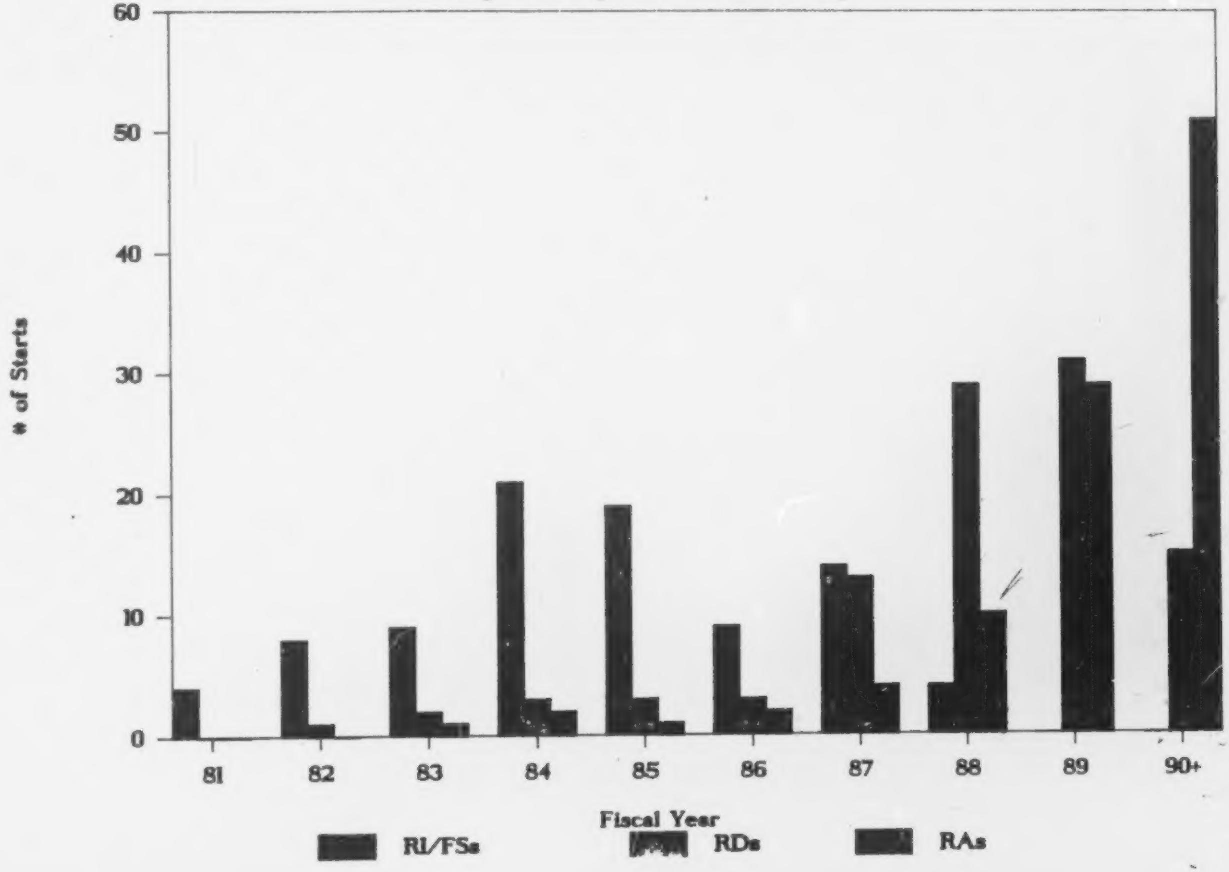
preliminary assessments/site investigations
removals
remedial work
enforcement work
other (staff, travel, etc.)

Included in this total are 28 signed cooperative agreements with New Jersey. A list is attached. Funds obligated under these cooperative agreements total $63,479,141. Two additional agreements (Krysowaty and Bridgeport) have not yet been signed by N.J.

In FY'87 more than $80,000,000 has been authorized for remedial work in N.J.(RI/FS, RD, RA, IRMs, PA/SI). As of 3/31/87, $47,320,000 was obligated. The $47M is included in the total of $146,791,958. Other major work such as Bridgeport are scheduled for the third and fourth quarters.

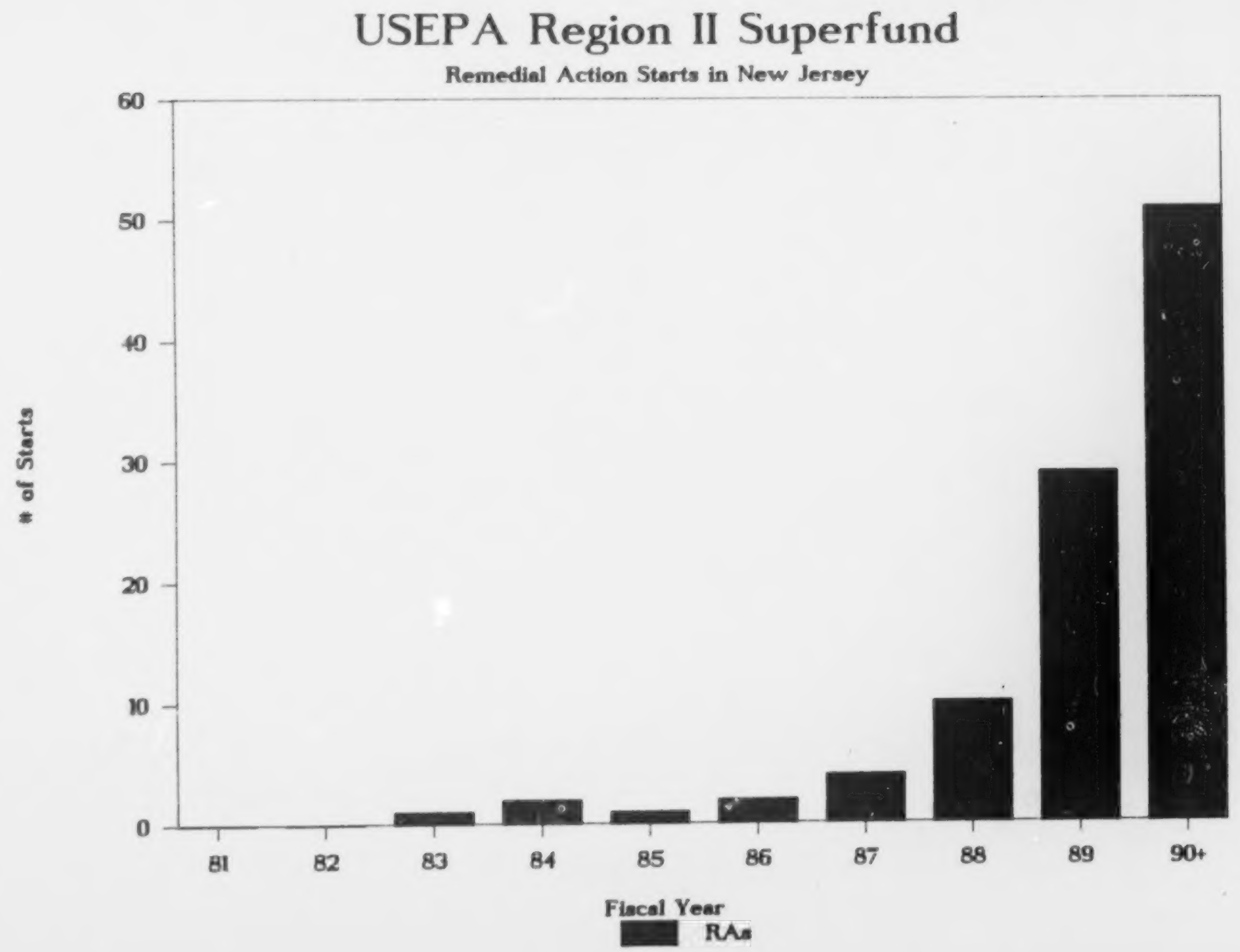
NJDEP Superfund Cooperative Assements

Agreement No. and Title	Current Net Period	Funds
V002560-84 Sharkey Landfill	12/30/83-06/30/86	2,251,570
V002637-87 Lipari		50,000
V002499-86 Monitor Devices	06/01/86-06/30/86	
V002498-86 Denzer & Schafer	06/01/85-06/30/86	
V002635-85 Albert Steel Drum	10/01/85-09/30/87	798,656
V002638-87 Radon		7,500,000
V002420-83 RCRA 3012	07/15/83-06/30/86	2,120,000
V002450-82 Friedman	09/06/82-05/31/85	204,277
V002460-82 Spence Farm	09/15/82-08/30/85	301,741
V002465-82 Goose Farm	09/15/82-09/30/85	210,000
V002550-84 Burnt Fly Bog	12/07/83-12/06/85	30,204,919
V002440-82 Prices Landfill	06/18/82-10/17/86	6,035,736
V002470-83 Syncon Resins	12/20/83-05/31/86	2,745,903
V002500-84 Combe Fill North	12/01/83-06/30/86	1,686,213
V002505-84 William Property	09/03/84-03/31/86	628,676
V002532-84 Ellis Property	10/01/84-09/30/86	450,000
V002555-84 Combe Fill South	12/27/83-12/26/85	550,000
V002565-84 Rockaway Borough	01/08/84-01/30/86	421,447
V002570-84 Beachwood/Berkely	01/13/84-01/12/86	632,540
V002590-84 Nascolite	03/30/84-02/28/86	540,000
V002595-84 Florence Landfill	03/23/84-12/01/86	1,556,670
V002600-84 Delilah	03/30/84-03/29/86	677,638
V002515-84 Imperial Oil	11/01/84-04/30/86	842,614
V002520-84 Montgomery Twsp.	10/01/84-09/30/86	643,434
V002540-84 Pepe Field	10/01/84-04/30/86	652,924
V002530-84 Rocky Hill	10/01/84-03/31/86	620,192
V002630-85 A.O. Polymer	10/01/85-09/30/87	861,491
V002631-87 Bridgeport Wateline		
V002455-82 Pijak	09/15/82-06/15/83	292,500
V002636-86 Krysowaty		
	TOTAL	$63,479,141



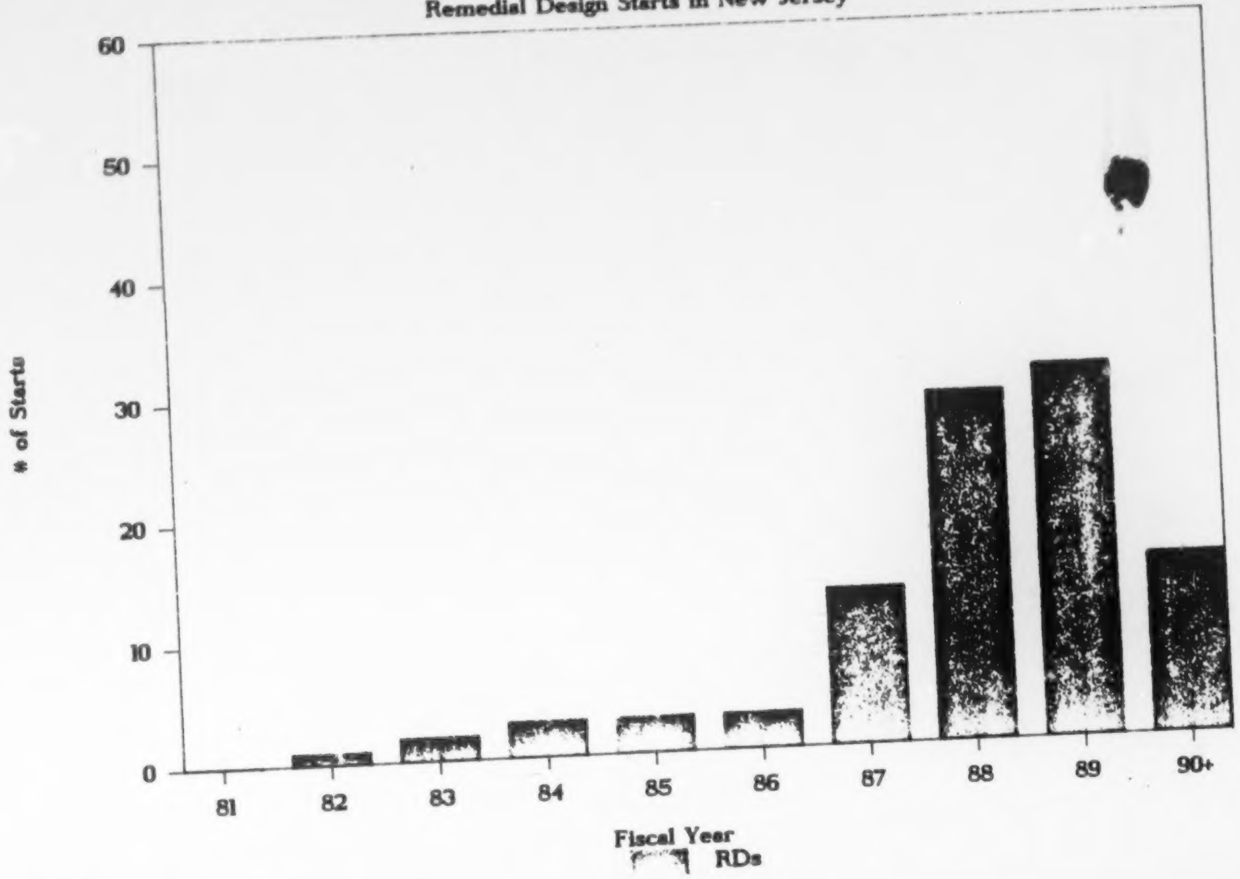
USEPA Region II Superfund

Major Activity Starts in New Jersey


USEPA Region II Superfund
Remedial Action Starts in New Jersey
# of Starts
60
50
40
30
20
10
0
81
82
83
84
85
86
87
88
89
90+
Fiscal Year
RAs

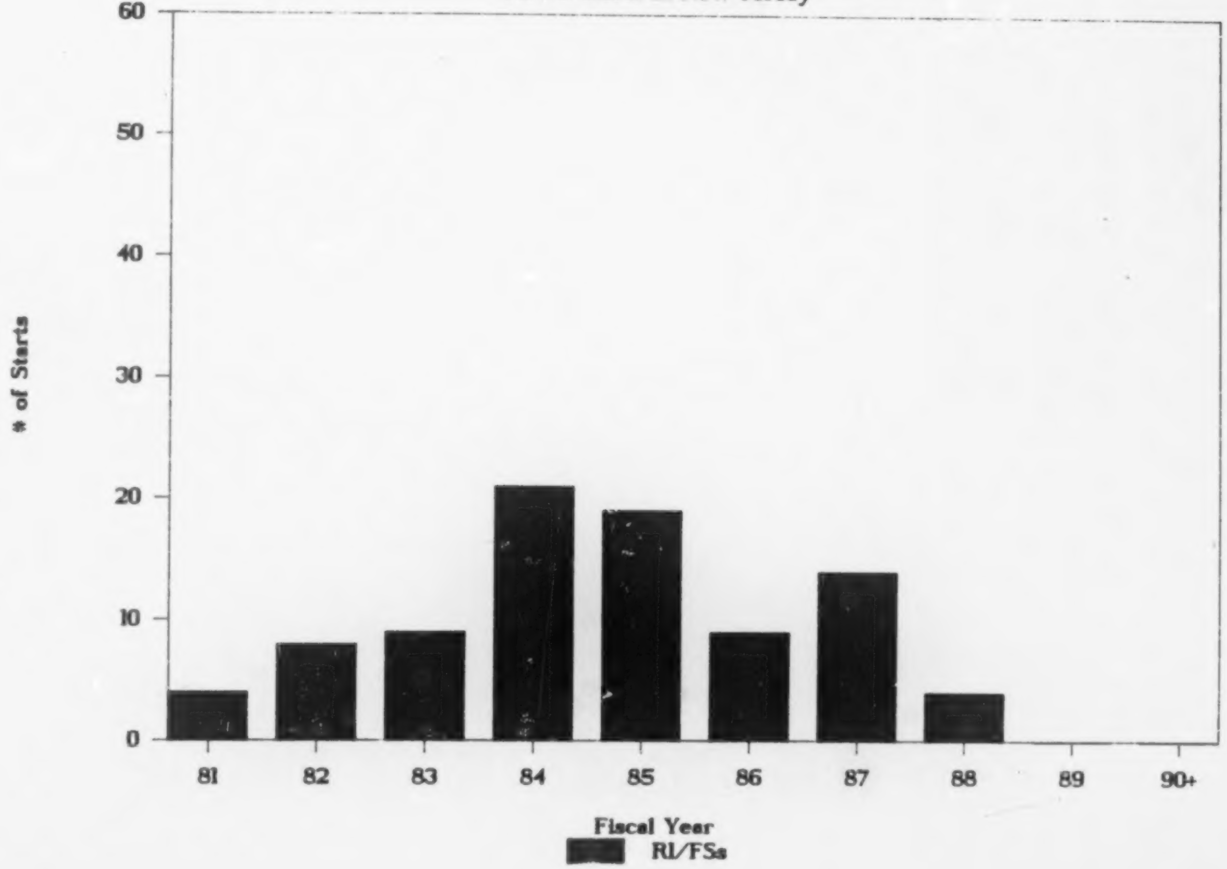
USEPA Region II Superfund

Remedial Design Starts in New Jersey



USEPA Region II Superfund

RI/FS Starts in New Jersey



Status of the Superfund Program in the State of New Jersey

Major Activities Started

Fiscal Year	RI/FSs	RDs	RAs
81	4	0	0
82	8	1	0
83	9	2	1
84	21	3	2
85	19	3	1
86	9	3	2
87	14	13	4
88	4	29	10
89	0	31	29
90+	0	15	51
Totals	88	100	100

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STATUS OF SUPERFUND IN NEW JERSEY
Major Activity Starts by Fiscal Year
Remedial Actions & Initial Remedial Measures

SITE NAME	LEAD	COMMENT	
** ****************** FY'83			
Lipari LF	F		1
** Subtotal **			
			1
** ****************** FY'84			
Burnt Fly Bog	S		1
Price LF	S		1
** Subtotal **			
			2
** ****************** FY'85			
Krysowaty Farm	F		1
** Subtotal **			
			1
** ****************** FY'86			
Bridgeport Rental	F		1
D'Imperio Property	F		1
** Subtotal **			
			2
** ****************** FY'87			
Pijak Farm	S-E		1
South Brunswick LF (BFI)	F-E		1
Spence Farm	S-E		1
Swope Oil	F-E		1
** Subtotal **			
			4
** ****************** FY'88			
Bog Creek Farm	F		1
Caldwell Trucking	F		1
Combe Fill South LF	S		1
Florence Land Recontouring	S		1
GEMS	S	IRM IN FY'85	1
Goose Farm	S-E		1
Helen Kramer LF	F		1
Lang Property	F		1
Lone Pine LF	F		1
Metaltec Aerosystems	F		1
** Subtotal **			
			10

STATUS OF SUPERFUND IN NEW JERSEY
Major Activity Starts by Fiscal Year
Remedial Actions & Initial Remedial Measures

SITE NAME	LEAD	COMMENT	
** ******************* FY'89			
Beachwood/Berkeley Wells	S		1
Chemical Control Inc	F	IRM IN FY'83	1
Ciba-Geigy Corp	F-E		1
Cinnaminson Groundwater	F		1
Combe Fill North LF	S		1
Delilah Rd LF	S		1
Diamond Alkali	S-E		1
Dover Municipal Well 4	S-E		1
Evor Phillips	S		1
Ewan Property	F		1
Fort Dix LF	F-E		1
King of Prussia	F-E		1
M & T Delisa LF	F-E		1
Monroe Twp LF	S-E		1
Montgomery Housing	S		1
Myers Property	F		1
Nascolite	S		1
Pepe Field	S		1
Reich Farms	F		1
Renora Inc	F-E		1
Rocky Hill Municipal Well	S		1
Sayreville LF	S		1
Sharkey LF	S		1
Syncon Resins	S	IRM IN FY'83	1
Tabernacle Drum Dump	F		1
Waldick Aerospace	F		1
Williams Property	S		1
Woodland Twp Route 532	S-E		1
Woodland Twp Route 72	S-E		1
** Subtotal **			
			29
** ******************* FY'90+			
AO Polymer	S		1
American Cyanamid	S-E		1
Asbestos Dump	F-E		1
Brick Twp LF	S-E		1
CPS/Madison Industries	S-E		1
Chemical Leaman	F-E		1
Chemsol	S-E		1
Cooper Road	S-E		1
Cosden Chemical Coatings Corp.	F-E		1
Curcio Scrap Metal	F-E		1
DeRewal Chemical	F		1

STATUS OF SUPERFUND IN NEW JERSEY
Major Activity Starts by Fiscal Year
Remedial Actions & Initial Remedial Measures

SITE NAME	LEAD	COMMENT	
Denzer & Schafer	S		1
Ellis Property	S		1
Fair Lawn Wellfields	S-E		1
Fried Industries	F		1
Glen Ridge Radium	F		1
Hercules Inc	S-E		1
Hopkins Farm	S-E		1
Horstmann's Dump	F-E		1
Imperial Oil	S		1
JIS LF	S-E		1
Jackson Twp LF	S-E		1
Kin-Buc LF	F-E		1
L E Carpenter	F		1
Lakehurst (NAEC)	F-E		1
Landfill & Development Co	S-E		1
Lodi Municipal Wells	F		1
Mannheim Ave Dump	F-E		1
Matlack Inc	S-E		1
Maywood Chemical	F-E		1
Monitor Devices	S		1
Montclair/West Orange Radium	F		1
NL Industries	F-E		1
Naval Weapons Station EARLE	F-E		1
PJP LF	S		1
Pomona Oaks	F		1
Radiation Technology	S-E		1
Ringwood Mines/LF	F-E		1
Rockaway Boro Wellfield	S		1
Rockaway Twp Wells	S		1
Roebling Steel	F		1
SCP (Carlstadt)	F-E		1
Shield Alloy	S-E		1
US Radium	F-E		1
Universal Oil Products	S-E		1
Upper Deerfield Twp	F		1
Ventron/Velsicol	S-E		1
Vineland Chemical	F		1
Vineland State School	S-E		1
WR Grace	F-E		1
Wilson Farm	S-E		1
** Subtotal **			
			51
** ******************** 'FY' NOT APPLICABLE			
Friedman Property	F	DELETED FROM NPL	1

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                        STATUS OF SUPERFUND IN NEW JERSEY
                        Major Activity Starts by Fiscal Year
                   Remedial Actions & Initial Remedial Measures


         SITE NAME
                               LEAD          COMMENT


** Subtotal **
                                                              1
*** Total ***
                                                            101
```

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STATUS OF SUPERFUND IN NEW JERSEY
Major Activity Starts by Fiscal Year
RI/FSs

SITE NAME	LEAD	COMMENT	
** ################## FY'81			
Bridgeport Rental	F		1
Burnt Fly Bog	S		1
Kin-Buc LF	F-E		1
Lipari LF	F		1
** Subtotal **			
			4
** ################## FY'82			
D'Imperio Property	F		1
Friedman Property	F	DELETED FROM NPL	1
Goose Farm	S-E		1
Lone Pine LF	F		1
Pijak Farm	S-E		1
Price LF	S		1
South Brunswick LF (BFI)	F-E		1
Spence Farm	S-E		1
** Subtotal **			
			8
** ################## FY'83			
Asbestos Dump	F-E		1
Bog Creek Farm	F		1
GEMS	S		1
Helen Kramer LF	F		1
Imperial Oil	S		1
Krysowaty Farm	F		1
Ringwood Mines/LF	F-E		1
Swope Oil	F-E		1
Syncon Resins	S		1
** Subtotal **			
			9
** ################## FY'84			
Beachwood/Berkeley Wells	S		1
Caldwell Trucking	F		1
Ciba-Geigy Corp	F-E		1
Combe Fill North LF	S		1
Combe Fill South LF	S		1
Delilah Rd LF	S		1
Diamond Alkali	S-E		1
Ellis Property	S		1
Florence Land Recontouring	S		1
Lang Property	F		1
Metaltec Aerosystems	F		1

STATUS OF SUPERFUND IN NEW JERSEY
Major Activity Starts by Fiscal Year
RI/FSs

SITE NAME	LEAD	COMMENT	
Montgomery Housing	S		1
Nascolite	S		1
Pepe Field	S		1
Reich Farms	F		1
Rockaway Boro Wellfield	S		1
Rocky Hill Municipal Well	S		1
Roebling Steel	F		1
Sharkey LF	S		1
US Radium	F-E		1
Williams Property	S		1
** Subtotal **			
			21
** ################## FY'85			
AO Polymer	S		1
Chemical Control Inc	F		1
Chemical Leaman	F-E		1
Cinnaminson Groundwater	F		1
DeRewal Chemical	F		1
Ewan Property	F		1
Fort Dix LF	F-E		1
Fried Industries	F		1
Glen Ridge Radium	F		1
King of Prussia	F-E		1
Montclair/West Orange Radium	F		1
Myers Property	F		1
Renora Inc	F-E		1
SCP (Carlstadt)	F-E		1
Sayreville LF	S		1
Tabernacle Drum Dump	F		1
Waldick Aerospace	F		1
Woodland Twp Route 532	S-E		1
Woodland Twp Route 72	S-E		1
** Subtotal **			
			19
** ################## FY'86			
Denzer & Schafer	S		1
Dover Municipal Well 4	S-E		1
Evor Phillips	S		1
L E Carpenter	F		1
Monitor Devices	S		1
NL Industries	F-E		1
Universal Oil Products	S-E		1
Vineland Chemical	F		1

STATUS OF SUPERFUND IN NEW JERSEY
Major Activity Starts by Fiscal Year
RI/FSs

SITE NAME	LEAD	COMMENT	
Vineland State School	S-E		1
** Subtotal **			
			9
** ################## FY'87			
Hopkins Farm	S-E		1
JIS LF	S-E		1
Landfill & Development Co	S-E		1
Lodi Municipal Wells	F		1
M & T Delisa LF	F-E		1
Mannheim Ave Dump	F-E	YET TO BE INITIATED IN FY'87	1
Maywood Chemical	F-E	YET TO BE INITIATED IN FY'87	1
Naval Weapons Station EARLE	F-E		1
Pomona Oaks	F		1
Radiation Technology	S-E		1
Rockaway Twp Wells	S		1
Upper Deerfield Twp	F		1
WR Grace	F-E		1
Wilson Farm	S-E		1
** Subtotal **			
			14
** ################## FY'88			
Cosden Chemical Coatings Corp.	F-E		1
Curcio Scrap Metal	F-E		1
Horstmann's Dump	F-E		1
PJP LF	S		1
** Subtotal **			
			4
** ################## Work Underway Under Other Authorities			
American Cyanamid	S-E		1
Brick Twp LF	S-E		1
CPS/Madison Industries	S-E		1
Chemsol	S-E		1
Cooper Road	S-E		1
Fair Lawn Wellfields	S-E		1
Hercules Inc	S-E		1
Jackson Twp LF	S-E		1
Lakehurst (NAEC)	F-E		1
Matlack Inc	S-E		1
Monroe Twp LF	S-E		1
Shield Alloy	S-E		1
Ventron/Velsicol	S-E		1

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                                  STATUS OF SUPERFUND IN NEW JERSEY
                                 Major Activity Starts by Fiscal Year
                                               RI/FSs
                                 @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@


          SITE NAME             LEAD          COMMENT
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@ @@@@ @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@  @@@


** Subtotal **
                                                                           13
*** Total ***
                                                                          101
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STATUS OF SUPERFUND IN NEW JERSEY
Major Activity Starts by Fiscal Year
Remedial Designs

SITE NAME	LEAD	COMMENT	
** ################## FY'82			
Lipari LF	F		1
** Subtotal **			
			1
** ################## FY'83			
Chemical Control Inc	F		1
Price LF	S		1
** Subtotal **			
			2
** ################## FY'84			
Burnt Fly Bog	S		1
Krysowaty Farm	F		1
Lone Pine LF	F		1
** Subtotal **			
			3
** ################## FY'85			
Bridgeport Rental	F		1
D'Imperio Property	F		1
GEMS	S		1
** Subtotal **			
			3
** ################## FY'86			
Bog Creek Farm	F		1
Helen Kramer LF	F		1
Swope Oil	F-E		1
** Subtotal **			
			3
** ################## FY'87			
Caldwell Trucking	F		1
Combe Fill North LF	S		1
Combe Fill South LF	S	YET TO BE INITIATED IN FY'87	1
Florence Land Recontouring	S		1
Goose Farm	S-E	YET TO BE INITIATED IN FY'87	1
Lang Property	F		1
Metaltec Aerosystems	F		1
Nascolite	S		1
Pijak Farm	S-E	YET TO BE INITIATED IN FY'87	1
Renora Inc	F-E		1
Sharkey LF	S		1
South Brunswick LF (BFI)	F-E		1

STATUS OF SUPERFUND IN NEW JERSEY
Major Activity Starts by Fiscal Year
Remedial Designs

SITE NAME	LEAD	COMMENT	
Syncon Resins	S		1
** Subtotal **			
			13
** ******************** FY'88			
Asbestos Dump	F-E		1
Beachwood/Berkeley Wells	S		1
Chemical Leaman	F-E		1
Ciba-Geigy Corp	F-E		1
Cinnaminson Groundwater	F		1
DeRewal Chemical	F		1
Delilah Rd LF	S		1
Diamond Alkali	S-E		1
Ellis Property	S		1
Evor Phillips	S		1
Ewan Property	F		1
Fort Dix LF	F-E		1
Glen Ridge Radium	F		1
Kin-Buc LF	F-E		1
King of Prussia	F-E		1
M & T Delisa LF	F-E		1
Montclair/West Orange Radium	F		1
Montgomery Housing	S		1
Myers Property	F		1
Pepe Field	S		1
Reich Farms	F		1
Ringwood Mines/LF	F-E		1
Rocky Hill Municipal Well	S		1
Sayreville LF	S		1
Tabernacle Drum Dump	F		1
Waldick Aerospace	F		1
Williams Property	S		1
Woodland Twp Route 532	S-E		1
Woodland Twp Route 72	S-E		1
** Subtotal **			
			29
** ******************** FY'89			
AO Polymer	S		1
Brick Twp LF	S-E		1
Cooper Road	S-E		1
Denzer & Schafer	S		1
Dover Municipal Well 4	S-E		1
Fried Industries	F		1
Hercules Inc	S-E		1

STATUS OF SUPERFUND IN NEW JERSEY
Major Activity Starts by Fiscal Year
Remedial Designs

SITE NAME	LEAD	COMMENT	
Hopkins Farm	S-E		1
Imperial Oil	S		1
JIS LF	S-E		1
Jackson Twp LF	S-E		1
Landfill & Development Co	S-E		1
Lodi Municipal Wells	F		1
Mannheim Ave Dump	F-E		1
Monitor Devices	S		1
Monroe Twp LF	S-E		1
NL Industries	F-E		1
PJP LF	S		1
Pomona Oaks	F		1
Radiation Technology	S-E		1
Rockaway Boro Wellfield	S		1
Rockaway Twp Wells	S		1
Roebling Steel	F		1
Spence Farm	S-E		1
US Radium	F-E		1
Universal Oil Products	S-E		1
Upper Deerfield Twp	F		1
Vineland Chemical	F		1
Vineland State School	S-E		1
WR Grace	F-E		1
Wilson Farm	S-E		1
** Subtotal **			
			31
** ******************** FY'90+			
American Cyanamid	S-E		1
CPS/Madison Industries	S-E		1
Chemsol	S-E		1
Cosden Chemical Coatings Corp.	F-E		1
Curcio Scrap Metal	F-E		1
Fair Lawn Wellfields	S-E		1
Horstmann's Dump	F-E		1
L E Carpenter	F		1
Lakehurst (NAEC)	F-E		1
Matlack Inc	S-E		1
Maywood Chemical	F-E		1
Naval Weapons Station EARLE	F-E		1
SCP (Carlstadt)	F-E		1
Shield Alloy	S-E		1
Ventron/Velsicol	S-E		1

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04/13/87
                                  STATUS OF SUPERFUND IN NEW JERSEY
                                 Major Activity Starts by Fiscal Year
                                          Remedial Designs
                                 @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@


          SITE NAME            LEAD          COMMENT
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@ @@@@ @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@  @@@


** Subtotal **
                                                                    15

** ******************** 'FY' NOT APPLICABLE
 Friedman Property              F    DELETED FROM NPL                1
** Subtotal **
                                                                     1
*** Total ***
                                                                   101
```

LIST OF N.J. RODS BY YEAR W/FY 87 PROJECTIONS

N.J. Records of Decisions of Remedies Selected
(program inception to date)

Fiscal Year 1982: 1
- Lipari Landfill

Fiscal Year 1983: 3
- Burnt Fly Bog
- Chemical Control
- Price Landfill

Fiscal Year 1984: 5
- Bridgeport Rental and Oil Services
- Lone Pine Landfill
- Spence Farm
- Pijak Farm
- Krysowaty Farm

Fiscal Year 1985: 8
- Bog Creek Farm
- D'Imperio Property
- Friedman Property
- Gloucester Environmental Management Services (GEMS)
- Goose Farm
- Helen Kramer Landfill
- Lipari Landfill
- Swope Oil Company and Chemical Company

Fiscal Year 1986: 10
- Caldwell Trucking Company
- Combe Fill North
- Combe Fill South
- Florence Land Recontouring
- Lang Property
- Metaltec
- Price Landfill
- Rockaway Borough Wellfield
- Sharkey Landfill
- Syncon Resins

TOTAL = 27

Projected RODs for Fiscal Year 1987: 10
- Nascolite Corporation
- Montgomery Township Housing
- Rocky Hill Municipal Well
- Waldick Aersopace Devices
- Williams Property
- Ciba Geigy Corporation
- South Brunswick Landfill
- Renora Inc.
- Chemical Control Corp.
- Diamond Alkali

TESTIMONY

SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT

APRIL 1987

Richard T. Dewling, Ph.D.
Commissioner
New Jersey Department of
Environmental Protection

TESTIMONY
NJDEP BEFORE SENATOR LAUTENBERG
APRIL 1987
SARA ISSUES AFFECTING THE
NEW JERSEY HAZARDOUS WASTE CLEANUP PROGRAM

I. Introduction

I am here today to provide testimony to the Subcommittee on Superfund and Environmental Oversight regarding the implications of the Superfund Amendments Reauthorization Act of 1986 on the New Jersey Hazardous Waste Cleanup Program. I would like to thank Senator Lautenberg and the other committee members for providing this occasion to discuss some of the current and future anticipated impacts of SARA.

As you know the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), legislated in 1980, provided the necessary federal authority to address emergency and abandoned site remedial actions. New Jersey has been doing this since the enactment of the New Jersey Spill Act in 1976. The Spill Act represented the first of its kind in the nation and the original template for CERCLA, especially in the area of treble damages. Under both the Spill Act and CERCLA, the Department has made substantial progress in the initiation of new actions and advancement of ongoing projects toward final remediation.

- From 1983 through 1986, New Jersey received more of the available federal Superfund dollars than any other state, totalling $81 million. Just last week it was announced that New Jersey will receive 17.5 percent of the total funds spent for the Superfund Clean Up Program nationwide for FY87. Our success in obtaining federal dollars has been due to a number of program achievements including early site assessment, data gathering, and vigorous pursuit of study completions.

- New Jersey now has 100 sites proposed or included on the National Priorities List (NPL), more than any other state in the nation; this is not because we have more problems but because we aggressively approached hazardous waste site remediation since 1980.

In addition specific NPL program accomplishments include:

- Remedial investigations/feasibility studies have been initiated at 94 sites, and one additional is planned for Fiscal Year (FY) 87,

- Eight designs have been completed; nine others are underway; and 13 will be initiated in federal FY87,

- Two construction projects have been completed, 18 are underway and four additional are planned in FY87. Over 53 immediate actions for operable units have been completed enabling us to stabilize the health hazards associated with these sites. This includes alternate water supplies to over 1500 residents throughout the state.

As you are aware, New Jersey was recently acclaimed by the Fund for Renewable Energy and the Environment (an independent Washington, D.C. based environmental group) as having the best hazardous waste management program in the nation. New Jersey's long standing experience and accomplishments in this area serve as a basis for our comments here today. While I will highlight some of our accomplishments in the last five years, I would like to make available to you our Annual Report on the Hazardous Waste Management Program issued in October 1986 and the recent update prepared in March of 1987. This report details many of our concerns with the new SARA legislation, as well as identifying our progress to date.

II. Impact of SARA on New Jersey

On October 17,1986 President Reagen signed the Superfund Amendments and Reauthorization Act (SARA) expected to provide $8.5 billion to support cleanups nationwide over a five year period.

Clearly, Congress has expressed its mandate for hazardous waste remediation over the next five years. The problems identified during the implementation of CERCLA have been addressed, for the most part, however, new complexities have arisen pursuant to the new SARA. Our ability to fully integrate all facets of the hazardous waste problem into an effective and comprehensive whole will be challenged for the next few years. Ideally, the potential implementation problems can be identified and resolved through the continued oversight of this and other committees.

SARA will have a significant impact on the nation's ability, in general, and New Jersey's ability, specifically, to cleanup hazardous waste sites. Although SARA establishes the mechanism to secure over five times the original funding level provided in CERCLA, it also includes several provisions that are expected to dramatically affect the remediation process.

Let me first commend the Congress on some of the positive points we find in SARA:

- Resolution of the preemption issued with our state Spill Fund;
- Increased levels of funding, though accessibility to those funds has become more difficult;
- Right to Know; Community Emergency planning groups and the Underground Storage Tank Program;
- Greater state role in overall process and management assistance grants for states;
- Cleanup Standards.

In summary, our principal concerns regarding SARA are that remedial actions will TAKE LONGER, AND COST MORE, but produce TECHNICALLY BETTER SOLUTIONS.

III. SARA Issues

A. Implementing SARA Will Take Longer:

Remedial process delays will result because The Remedial Investigation/ Feasibility Study (RI/FS) phase will change significantly as a result of SARA. The basic underlying shift in SARA is the reversal by Congress from requiring proven technologies for cleanup, to encouraging the use of new and emerging or innovative cleanup methods that will achieve permanent solutions (remedies that significantly reduce the volume, toxicity or mobility of the hazardous materials). These impacts are experienced in several areas discussed below:

1. Treatability Studies - Previously, treatability studies were optional during the RI/FS. However, in order to determine which new technologies are appropriate, treatability studies will now undoubtedly be an integral part of almost all RI/FSs, and will therefore extend the timeframe associated with the RI/FS.

2. Cleanup Standards - SARA requires that the proposed remedy meet or exceed all applicable, relevant, and appropriate requirements (ARARs) of all federal and state environmental laws and regulations. This provision of SARA reinforces the need for treatability studies prior to the selection of the remedy to assure that each new technologies will achieve acceptable standards, particularly as it may relate to state requirements.

3. New Technologies - The use of new technologies may require pilot studies in the design phase. Mobile treatment units, or on-site construction of the new technologies remedies may also be necessary and would be expected to affect the duration of the remedial action phase, but should reduce future Operation and Maintenance (O&M).

B. SARA Will Cost More to Implement:

The cost of the remediation process will also significantly increase under SARA. The intent of Congress was to reduce overall the long-term cost of remedial action by reinforcing the land disposal restrictions in RCRA and preventing what Congress describes as the "Shell Game", simply moving material from one site to another and possibly having to remediate that site in the future. RI/FS delays caused by technology evaluations and ARAR mandates will result in an overall increase in the cost of remedial actions, consequently, the state's cost share will increase comparably.

However, SARA also provides New Jersey with more liberal means of receiving credit against our future cost share for state funds previously spent at NPL sites. SARA contains a provision that provides 90% federal funds for up to 10 years to operate on-site treatment facilities that restore ground water and surface water. This should reduce the state's cost share of Operation and Maintenance which was previously interpreted to be 90/10 for the first year and 100 percent state funded for the remainder.

In the long term, the approach of satisfying ARARs and favoring permanent remedies is expected to achieve a better cleanup. However, these new requirements of SARA are expected to significantly impact the previously anticipated duration of the entire remedial action process (RI/FS, design, construction). The impacts of this have thus far been seen in the design phase. Of the 28 scheduled to start in FY87, it is expected that at most 14 will be initiated. Constant interaction with EPA is assisting in defining the full impact of SARA.

C. SARA Will Cause Scheduling Uncertainties:

The time delays associated with ARAR mandates and technology evaluations will directly affect scheduling of remedial activities. In addition, because the duration of these technolgy evaluations and treatability studies is currently unclear, our ability to plan future activities and funding needs is severely impacted.

In October 1986 New Jersey developed a five year $1.6 billion plan for the remediation of its hazardous waste sites through FY91. In this plan, we identified funding from three key sources: federal funds under SARA; responsible party or private funds obtained through enforcement actions or agreements; and a combination of state funding sources (taxes, bonds, general appropriations). This plan utilized average project phase duration experienced under CERCLA. Projections at that time assumed that the remedial process would take between five and six years to complete. These projections will need to be extended to incorporate the additional work anticipated under SARA. It is estimated that completion of the remedial process implemented under SARA would take between six to ten years per site. In some instances the remedial process will extend even longer; the extended project duration will shift funding need comparably.

D. Federal Funding Issues:

As increased costs and time delays affect the state's Remedial Action planning process, uncertainties emerge with regard to funding of remedial activities, and the role of federal funding becomes even more critical. We see several problems looming on the horizon with respect to availability of federal funding to finance a very costly program in a timely manner.

1. Curtailed Reimbursement

Of a primary concern is a provision under Section 104(c) which outlines conditions under which states are entitled to reimbursement or credit for funds expended on the National Priorities List (NPL) sites.

A review of this provision and the EPA Working Group documents on the revisions to the National Contingency Plan (NCP) suggests that, in the absence of a cooperative agreement, EPA has arbitrarily limited credit for expenditures to after the date of enactment of SARA and restricted it to remedial actions only.

For New Jersey, a state endowed with funds of its own and the ability to act earlier than EPA, it is imperative that the State be allowed to initiate remedial planning activities at any time, and to be able to obtain either state credit or reimbursement when EPA is ready to act. We cannot wait to list a site on the NPL and then enter into a cooperative agreement to ensure that the State receives its eligible funding from CERCLA. This Agency interpretation is contrary to the spirit of SARA: Remediate now when costs are lower and the environmental impact can be minimized.

We recognize that EPA would require pre-approval of the expenditures but, New Jersey must be allowed at least the opportunity for credit for remedial planning activities.

New Jersey has made the commitment that it will aggressively pursue its site investigation and remediation efforts. We do not believe that it was the intent of Congress to penalize states for having aggressive enforcement and remediation programs. Regardless, New Jersey will actively continue with its hazardous waste site remediation and enforcement programs, but at the expense of curtailed federal reimbursement.

2. Elimination of Federal Reimbursement for Monitoring as part of Operation and Maintenance

EPA continues to interpret remedial action to include "the completion of treatment or other measures, whether taken on-site or off-site, necessary to restore ground and surface water quality to a level that assures protection of human health and the environment". There is always a degree of monitoring required to insure that "the treatment or other measures" is restoring or has restored water quality, and it follows that this monitoring should also be considered an integral part of remedial action. USEPA is apparently not interpreting remedial action to include such monitoring, but feels that monitoring is a State responsibility. The intent of Congress in this matter should be clarified to reduce the level of interpretation needed by the agency. The stakes associated with this issue are significant. Currently we are processing a 100 percent state funding authorization for Krysowaty Farm monitoring of $400,000.

3. Phased Funding

The US Army Corps of Engineers has indicated that it cannot statutorily proceed with a project unless it has funds for the total project. This means that a multi-year project which could cost $100 million, would have to be funded up-front. This situation multiplied only a few times would tie up the total Superfund budget; whereas if multi-year projects could be phase-funded, either more work could be accomplished and/or less monies would be obligated. The Corps can phase-fund its other civil works projects, so it has the capability to accommodate phased funding; it must apparently only be given the clear authority by Congress under SARA to enable these actions to proceed.

4. Core Program/Management Assistance

Federal funding support of the administration of Superfund has been unsatisfactory. EPA is beginning to institute a Superfund Core Program Funding to fund the support elements within a state to operate a Superfund Program. Their main intention is to start Superfund Programs in states where such programs do not exist. The average grant is expected to be $250,000 per state, with not much variance from that figure.

Their intentions are good, but this amount does not approach the level of support New Jersey applies to the Superfund Program (in excess of $10 million). In essence, New Jersey is being penalized for having a large aggressive remedial program. Support should be provided in an equitable fashion so that states with no programs receive the funding necessary to start them, and states, like New Jersey, receive the federal support necessary to continue their aggressive programs.

EPA is also instituting management assistance grants for State Administration costs on federal lead projects. This is a major step forward in ensuring that New Jersey receive compensation for the necessary costs of the State expenses on federal lead projects. The State involvement provisions of SARA will increase our role and our costs. It is still too early to determine whether or not New Jersey will receive adequate assistance to cover our administrative costs.

We expect federal management assistance to cover a substantial portion of the costs associated with the administration of the federal cleanup program.

5. Federal Funding Allocation Delays

During 1986 the NJDEP authorized $37.8 million in the form of advanced funding to the USEPA to insure that necessary remedial activities in the State continued. Although some of these funds were not ultimately used by USEPA and have been or are being returned, New Jersey still lost the use of some of these monies. By financing USEPA, New Jersey insured continuation of critical clean-ups. However, this very likely allowed USEPA to use funds in other states that should have been used in New Jersey.

Now that SARA has been enacted, the Superfund funding apparatus is coming back to life at a painfully slow pace. The funding picture for FY 1987 is only now becoming clear, and the year is half over. Programming major activities under these circumstances is difficult, at best and exacerbates the existing confusion and time required for the overall process.

E. Dealing with Statutory Hammers concerning Site Inspections

SARA requires that preliminary assessments (PAs) be performed at all sites by 1988 and that site investigations (SIs) be performed sites contained on the CERCLIS list by January 1, 1989. New Jersey will meet the 1988 mandate for PAs and may be the only state to do so,by completing over 1240 PAs, three months prior to the deadline.

The SI mandate presents other problems. After five years of Superfund, New Jersey, in cooperation with EPA Region II, has completed a significant number of SIs. However, current figures show that approximately 820 site investigations are yet to be completed by the January 1, 1989 deadline. Our estimates indicate that in order to complete this commitment a manpower increase of 25-30 full time employees would be required. Further, this work would require that analytical laboratory capacity in excess of 8,000 samples (10 samples per site), be guaranteed through this period. The cost of these endeavors is estimated at $20 million dollars for New Jersey alone.

If it was the intent of Congress to have this mandate achieved then money would have to start flowing immediately. Even if the money was immediately available, laboratory capacity would be the limiting factor in determining the number of SIs that could be completed. This mandate would overwhelm the EPA contract lab program, given the commitment of other states SI programs and the large number of samples to be generated under the remedial investigation phase of SARA.

Obviously, the statutory SI mandate requires that a clearly defined strategy be established now, if there is any possibility that the mandate is to be met. Compliance will also be costly.

F. CERCLA/RCRA Issues

1. Off-Site Disposal Policy

We believe that it was the intent of SARA and RCRA to be administered harmoniously. SARA mandates that waste resulting from actions taken under CERCLA be disposed of at RCRA and TSCA facilities. The definition of "CERCLA waste" has been interpreted to date to include both hazardous and non-hazardous waste as defined by RCRA. This means that waste considered to be non-hazardous must be disposed of at hazardous waste facilities. As a result, we may be wasting dollars and inappropriately managing our limited available disposal capacity. This results, in some cases, in our dealing with a waste problem for appearance or procedures sake and not gaining any true environmental benefit.

In addition, CERCLA waste currently cannot be sent to a facility found to be out of compliance with RCRA regulations. In addition, all applicable units at these facilities with releases must be controlled under an approved RCRA Corrective Action Program incorporated into a facility permit or federally approved order. This means that, under the current system, CERCLA waste cannot go to any facility where any of the facilities units are out of compliance even if, the CERCLA waste is going to units that are in compliance with RCRA. Since adequate disposal capacity is at a premium we should not inappropriately manage CERCLA generated wastes.

The off-site disposal policy set forth under CERCLA and SARA, although theoretically reasonable, has proven to be largely inoperable. The policy has halted many cleanups already in progress and prevented the initiation of others. The policy has substantially increased expenditures for cleanups by establishing requirements that are well beyond what is appropriate and prudent using sound environmental practices.

The Department has identified additional problems and potential operational solutions to the off-site disposal policy. For example, there is no national system to identify acceptable disposal facilities. Facilities move in and out of compliance from month to month without anyone knowing about it. Consequently, acceptable disposal sites are unknown, delays and rebidding of cleanup contracts result, and cleanup actions are delayed. A workable national tracking and reporting system should be established to provide states with current listings of acceptable disposal facilities.

Furthermore EPA should amend its off-site disposal policy to allow disposal of non-hazardous waste at non-hazardous facilities to reduce overall costs, retain limited capacity and still provide the appropriate level of environmental and health protection.

2. Publicly Owned Treatment Works (POTWs)

In numerous Superfund cleanups, the disposal of properly pretreated effluent meeting appropriate pretreatment standards is a question of critical concern and has been a contributing factor to construction delays. Traditionally, the acceptance of wastewater by POTWs had been regulated under the Clean Water Act. Congress had originally exempted POTWs from RCRA. Since Congress did not specifically indemnify POTWs under the reauthorization of CERCLA, EPA cannot indemnify POTWs for liability. Consequently, POTWs may continue to refuse to accept CERCLA effluent for fear of losing liability coverage or being subject to third party suits. This lack of legislative or regulatory orchestration is contrary to the original intent of Congress under the Clean Water Act and RCRA.

The impact of this problem was demonstrated recently in the example of Lone Pine Landfill located in Monmouth County. EPA sought to utilize the Ocean County Municipal Utilities Authority (OCMUA), a facility built with federal dollars under the Clean Water Act, for the secondary treatment of thoroughly pretreated landfill effluent. OCMUA refused to accept the waste based on the SARA liability issue. Another option for Lone Pine Landfill project involves construction of an on-site treatment plant. This option would require that another treatment plant be built with federal dollars, under SARA, rather than using an existing off site facilities that has the capacity and capability to handle this effluent.

3. Research Centers

Sections 209 and 311 of SARA require the establishment of hazardous waste research centers for the research and development of new, innovative technologies to treat and dispose of hazardous wastes. SARA, however, fails to exempt these academic research centers from the extensive research facility permitting requirements mandated by the Resource Conservation and Recovery Act (RCRA). Here again it was thought that the implementation of SARA and RCRA would be harmoniously orchestrated. The result of this inconsistency is that few, if any, academic facilities will be established since they are subject to extensive RCRA permit requirements.

The Department believes that to the maximum extent practicable, all hazardous waste activities should be controlled. In the case of academic research, however, we are exploring options for alternative control mechanisms other than full facility permits and requesting that EPA consider a variance for these centers. We have asked the academic community to assist government in solving the hazardous waste cleanup problem and then create a set of circumstances that makes it impractical or impossible to do so.

G. Federal Facilities - State Role And EPA Responsibility

Federal facilities present a unique and difficult problem for the states. The ultimate enforcement authority against federal facilities generally rests with the federal government. EPA must hold federal facilities to the same requirements as private responsible parties. Congress, with EPA assistance, must direct part of the federal facility budgeting process for environmental programs and remediation. In New Jersey we have found that compliance and cooperation by each installation depends on the attitudes of each base commander. EPA must take enforcement actions against the non-compliant federal facilities.

H. Contracting for Professional Services

New Jersey as you know, has led the way in Superfund Cleanup. We have tended to identify problems before other states and as a result have pioneered many solutions. Incurring the problem first has denied us the benefit of prior EPA experience or prior experience by other states. This has in some cases, prevented us from working as fast as we would like. In addition, as we have gained experience we have found that many of the early assumptions of the Superfund plans needed to be revised. As of this writing, New Jersey has had considerable experience with Feasibility Studies (RI/FS) and Remedial Actions. We have also performed some major cleanups. We expect as we progress into the design phase of the program, to continue to lead the nation in hazardous waste cleanup.

The state recognizes, however, that in some instances contract award has not been accomplished as quickly as we would have liked. We have now remedied this problem through the use of term contracts and adherence to detailed procurement schedules. Given the complexity of most of these projects and the need to adhere to both state and federal procurement requirements we feel that a 3-4 month timeframe from the time of RFP advertisement to contract award is reasonable.

While it is true that RI/FS activities have, in most cases, exceeded the original schedules, this has been the case on a national level for both EPA and state lead projects. In most instances, as knowledge is gained about a particular site we often find the contamination problems to be far more complex than originally anticipated. Very often additional sampling and testing has been required in order to reach sound scientific conclusions and make good engineering recommendations for site remediation.

This situation is due in part to the inadequacies of the SI/HRS system. Sufficient information is usually unavailable at the time of scoping of the RI. To address this, New Jersey has pioneered a program of phasing RIs and prescoping RIs to allow for a more thorough and scientifically correct investigation on which to base our remedial activities. In addition, the state consciously delayed some projects in order to upgrade our laboratory quality assurance requirements to insure that a valid and scientifically defensible data base is established.

Again, a look at more recent events reveals that our procurement process is in fact a superior one. In addition to maximizing competition, it encourages more vendors to enter the "hazardous clean-up area". New Jersey's system is now making awards with greater frequency. This is possible because we have been steadily succeeding in solving problems such as insurance and responsible party negotiation. The New Jersey method of contracting appears to be a model for changes deemed necessary in the federal model. Competition among consultants for work in New Jersey is keen and this system has resulted in the availability of a breadth of contractors for DEPs use and has allowed us to avoid such stinging criticism as EPA received on their procurement system.

IV. Summary and Conclusions

From my presentation, I think you can see that SARA posed many new questions to both EPA and the states.

We believe that cleanups under SARA will TAKE LONGER and COST MORE, but will PRODUCE TECHNICALLY BETTER SOLUTIONS over the long term.

The uncertainty in dealing with the new law has resulted in interim project delays while both agencies attempt to adjust ongoing projects to the new provisions of SARA. While we recognize that interim delays are to be expected progress to date has been a continuing concern to New Jersey. Future problems will emerge over the long-term for the New Jersey hazardous waste cleanup program if the issues I've raised are not addressed expeditiously.

I would like to thank the committee for allowing us to bring these critical issues on the implementation of SARA to you today. It is our hope that this forum will allow the subcommittee to clarify the intent behind SARA and to re-direct the USEPA toward a workable implementation of the statute itself.

I would welcome any questions you may have on the issues I have presented or on other issues which may be of concern. Again, thank you for the opportunity to comment.

TESTIMONY ON IMPLEMENTATION OF
THE SUPERFUND AMENDMENTS REAUTHORIZATION ACT

presented by

Kenneth Brown, New Jersey Environmental Federation

and

Henry S. Cole, Ph.D, Clean Water Action and the

National Campaign Against Toxic Hazards

before the

SENATE SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT

SENATOR FRANK LAUTENBERG, CHAIRMAN

April 14, 1987

Mr. Chairman, my name is Ken Brown, I am the Director of the New Jersey Environmental Federation which is the New Jersey chapter of Clean Water Action. With me today is Dr. Henry S. Cole, the Science Director for Clean Water Action and the National Campaign Against Toxic Hazards.

The New Jersey Environmental Federation, Clean Water Action and the National Campaign Against Toxic Hazards all applaud your continued efforts to solve the nation's toxic waste crisis. The strong Superfund Law that we now have would not have been possible without your strong leadership. We appreciate the opportunity to testify today because we share your deep concern about EPA's implementation of Superfund.

As you know, the New Jersey Environmental Federation is deeply involved in Superfund issues. Our 21 member organizations worked hard for a strong reathorization. Many of these groups are primarily concerned with Superfund sites in their communities. Some examples include the Ocean County Citizens for Clean Water who are fighting to clean up the Ciba-Geigy site, Burnt Fly Bog Citizens Advisory Committee working on Burnt Fly Bog and Imperial Oil, PJP Landfill Task Force which led the fight to put out the fire in Jersey City, and many more. In addition to its legislative efforts on Superfund, the Environmental Federation and Clean Water Action have provided both strategy and technical assistance to dozens of "Superfund communities" around the nation.

We realize that the new Superfund has only been in effect for five months and that it represents a huge increase in the size and requirements of the program. Nevertheless, we are disturbed by some initial signs that EPA implementation may be weak in two critical areas: (1) cleanup selection/standards and (2) public participation.

Cleanup Selection.

The new Superfund Law clearly states a strong preference for permanent solutions--those which reduce the volume, toxicity or mobility of hazardous substances. EPA is required to utilize these technologies to the maximum extent practicable. The Law states that offsite transfer should be the least favored choice. The law also requires that that the cleanup must be protective of human health and the environment and meet applicable health-based standards of federal and state laws.

These requirements grew out of widespread concern that EPA cleanup plans were based primarily on methods which leave nearly all of the hazardous waste in the ground: offsite disposal and onsite containment. Congress clearly recognized that stop-gap cleanups leave communities vulnerable to the threat of exposure for generations to come. Moreover, it became clear that there was no uniformity in the degree of cleanup provided at different sites. For example, at some sites pump and treat systems were planned to restore contaminated aquifers and at other sites, the only remedy chosen was replacement of the water supply.

Through our assistance to community groups, we have had a broad range of experience with a variety of Superfund sites. What we are seeing at these sites is disturbing. It seems that citizens are far more enthusiastic about the cleanup requirements of SARA than EPA. We would like to discuss several examples.

Ottati and Goss, Kingston, New Hampshire.

This site represents the first cleanup decision under SARA. For more than 20 years it was used by industry for drum reconditioning and disposal. The result is serious levels of soil and groundwater contamination. The major chemicals of concern are PCB's, arsenic and volatile organic compounds. At least five carcinogens are present in high concentrations at the site. The groundwater near the site is currently being used and use is expected to grow with development in the future.

The citizens group at the site has been pressing for a permanent cleanup and expressed its preference for onsite incineration of all PCB and VOC contaminated soils. EPA's Record of Decision, however, would restrict the incineration to 5000 cubic yards of soil having a PCB concentration greater than 20 ppb. 14,000 cubic yards of soil containing VOC's would be aerated to reduce the concentration to 1 ppm and the aerated soil would be returned to the ground. EPA's cleanup plan would allow soils with a PCB concentration as high as 20 ppm to remain in the ground at the site. EPA has rejected an option that is clearly practicable--incinerating a much larger volume of soils to reduce PCB residuals to a much lower level. In fact, expanded incineration could eliminate the need for expensive soil aeration. PCB's are extremely toxic, persistent and tend to bioaccumulate in the food chain; they are carcinogenic.

A second issue raised at the site involves EPA's dismissal of Maximum Contaminant Level Goals (MCLGs) as an appropriate standard for groundwater. SARA requires that remedial actions achieve a level of cleanup that attains MCLGs under the Safe Drinking Water Act where such goals are relevant [presumably where current or potential drinking water sources are involved]. However, EPA arbitrarily chose less stringent cleanup goals by erroneously claiming that the MCLG levels "are at the limits of monitoring ability." This rationale sets an extremely poor precedent for future cleanup decisions.

Industrial Excess Landfill, Uniontown, Ohio.

Industrial Excess Landfill is an extremely dangerous site. Rubber companies from the Akron area dumped millions of gallons of hazardous waste into a 30 acre landfill. More than 20,000 people depend on groundwater in the area as their sole source of drinking water; scores of families live within a half mile of the site. While EPA's emergency response eliminated the threat of methane explosion in nearby homes, large quantities of methane gas continue to be generated at the site; the gas also contains hundreds of parts per million of toxic VOC's including benzene, TCE and tetrachlorethylene. A number of the same chemicals have shown up in well water and in the blood of residents living near the site.

The Uniontown site is still in the Remedial Investigation stage. A cleanup decision is many months away. Nevertheless, EPA in Region V appears to be setting the stage for a substandard cleanup. The key issue is the informational base required for the kind of cleanup and cleanup decision-making required by SARA.

o EPA's original groundwater monitoring plan made plume mapping impossible; only after intense citizen pressure did EPA expand its groundwater sampling.

o Despite the continued pleading of citizens, EPA resists doing any core sampling of the landfill. Sampling of soil and waste has been restricted to the clean soil above the landfill and the margins of the site. Similarly, gas monitoring wells have only been installed along two of the fencelines of the 30 acre landfill. In other words, EPA declines to obtain critical information on the vast majority of the site. This approach will severely limit the types of approaches that can be used at the site. It is hard to imagine a permanent cleanup without knowing the distribution of wastes and gases within the site. Citizens are deeply concerned with the prospect of a cleanup that features little more than an alternative drinking water supply and a clay cap.

Ciba-Geigy, Toms River, New Jersey.

The company has illegally buried more than 100,000 drums of toxic waste in its property adjacent to the Toms River. Soils are severely contaminated and a large groundwater plume has moved offsite. Presently the company is pumping groundwater to contain the spread of the plume into nearby residential areas. However, EPA is allowing the company to discharge the treated groundwater only 1500 feet off the Jersey shore near Lavallette. We are greatly concerned that EPA will select a longterm cleanup plan that would pump even larger amounts of toxic substances into shallow ocean waters. We believe that using the ocean to clean the Superfund site is clearly contrary to SARA's provision stating that offsite disposal is the least favored option.

In addition, the RI in its present form, is insufficient in its description and analysis of sources to allow the planning of a permanent and cost-effective cleanup. The Ocean County Citizens for Clean Water pointed this deficiency out in formal comments on the RI last year. To our knowledge no steps have yet been taken to correct this problem. Again citizens are way out ahead of EPA in pushing for effective, longterm solutions.

Public Participation.

One of the most important provisions of the new Superfund law gives citizens the opportunity to apply for technical assistance grants so that they can hire their own independent experts to review information concerning the sites. The above examples show the critical role that citizens can play in encouraging strong implementation of the new law. The grants will give citizens another important tool to effectively participate in cleanup decisons.

Unfortunately EPA is depriving scores of communities from getting the technical assistance funds that they desparately need. According to EPA these grants will not be available until next winter. This is totally unacceptable particularly in light of the fact that groups living near such sites as the Ellis site in Evesham Township, Burnt Fly Bog, Imperial Oil, the Radon sites in Montclair and Glen Ridge, and the Diamond Alkali site in Newark, to name a few, are or will soon be at the critical stage of the cleanup selection process where they need technical assistance. The grants will be all but useless after the decisions have been made.

There is however, another way. If EPA is serious about giving citizens an effective voice, they can issue an Interim Final Rule NOW and begin making grants available immediately while, at the same time soliciting comments on the rule. Since the program is new, EPA could gain experience from the first group of grants that it could apply to the final regulations.

Senator Lautenberg we urge you to press EPA to take this emergency act so that community groups can utilize the funds made available by Congress.

CONCLUSION

In summary, we are confident, Mr. Chairman, that you will use the influence of this important oversight subcommittee to ensure strong implementation of the new Superfund. We look forward to working with you on this critical task.

STATEMENT OF JOEL S. HIRSCHHORN
SENIOR ASSOCIATE, OFFICE OF TECHNOLOGY ASSESSMENT
BEFORE THE
SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

April 14, 1987

Mr. Chairman, thank you for asking OTA to participate in today's field hearing on the implementation of Superfund. As a result of our study Superfund Strategy, and a number of case studies of Superfund sites, particularly the Lipari Landfill here in New Jersey, and recent Congressional requests to plan an examination of the implementation of the new Superfund statute, OTA is able to make several observations on Superfund's implementation. We focus our attention on technical issues and the effectiveness of actions taken or planned for Superfund sites.

Today I will highlight three issues that we find to be especially significant, considering the thrust of the new Superfund statute:

1. changes are occurring in the conduct and content of Feasibility Studies and Records of Decision that make it more difficult for the public and other interested parties to examine the basis for cleanup selections

2. there is still a tendency to underestimate the effectiveness and overestimate the cost of newer, permanently effective cleanup technologies

3. there is not enough independent technical peer review and quality control to ensure good technical work in the implementation of all phases of Superfund.

Evaluation and Selection of Remedial Cleanup Technology

The Feasibility Study conducted for sites on the National Priority List is a very important part of the Superfund system. There are several trends emerging in the conduct of these studies:

o engineering firms working for EPA are not making explicit recommendations to EPA for cleanup technologies in Feasibility Studies

o the name of the firm performing the Feasibility Study is often nowhere mentioned in the study

o the content of Feasibility Studies and the nature of the selection made by EPA are becoming vague, and critical analyses, tests, and decisions are being shifted to the later, much less visible Design Study stage.

No Professional Recommendations One of the original concepts for these studies was that professional engineers would thoroughly examine potentially feasible cleanup options and make a recommendation to EPA. It seems to OTA that the idea of objective, professional engineering firms making a recommendation backed up by thorough analysis is a good one. No one has challenged the premise that Superfund is too large a program to have technical professionals working for the government do all the work themselves; that is, everyone agrees that contractors are essential.

However Feasibility Studies are coming to resemble engineering text books with old data and rote discussions stored in an engineering firm's computer rather than studies focused on specific sites and their problems. Apparently EPA is directing its Superfund contractors to avoid making specific recommendations in Feasibility Studies. The reason seems to be to allow EPA greater flexibility in choosing a cleanup remedy in the Record of Decision that is issued for a site.

The lack of a professional recommendation that an engineering firm is willing to stand behind permits EPA to put a great deal of weight on non-technical factors in selecting a cleanup remedy. A relatively large number of potentially feasible cleanup technologies and plans often are discussed and evaluated in the Feasibility Study in such a way that several emerge as feasible--even when there are profound technical differences among them. Non-technical factors that seem to influence EPA's selection of remedies include: how much money EPA has decided to spend on the site, how much community concern has been expressed, how much news media attention has been given to the site, and how much Congressional interest has been shown in the site.

When cleanup recommendations are not made, the public, particularly the affected local community, which has an opportunity to examine and comment on a Feasibility Study, is at considerable disadvantage. Because Feasibility Studies are large technically complex documents, the absence of a specific recommendation that is likely to be selected by EPA increases the burden on those attempting to evaluate the report. Delving into one or two highly ranked cleanup options is one thing. To examine six or more is quite another.

Identity of Contractor It seems reasonable that interested parties have a right to know who performs a Feasibility Study. Since the report is a professional endeavor, the past experience of the firm is relevant. The public and the affected community may find it relevant to examine the credentials of people working on the study, the past studies of the contractor, and past indications of the quality of the contractor's work. There are other connections, too. For example, to what extent has the EPA contractor also worked for responsible parties at the site? Does the contractor have some connection to technologies being considered for the site? Is the study contractor likely to also have the ability to perform later stages of the cleanup? The last two questions are becoming more important because firms doing Feasibility Studies have been diversifying, so that they often develop and own proprietary cleanup technologies and do certain types of field work.

Shifting of Work and Decisions To A Later, Less Visible Stage The content of Feasibility Studies and Records of Decision are becoming increasingly vague and generic. To a large extent, this has occurred for the Lipari Landfill cleanup. Scientific analyses, data gathering, and laboratory and field testing critical to the examination and selection of a particular cleanup remedy should be in the Feasibility Study, but often they are not there. RODs that should make it crystal clear what the cleanup will consist of, do not. The public and affected community, therefore, must examine and comment on things that don't really say what will -or might- happen at the site. EPA shifts detailed work and decisions to the subsequent Design Study phase. The original concept of the Design Study is that a professional engineering firm would, so to speak, draw up the blueprints to implement the cleanup remedy selected by EPA. Instead, increasingly the Design Study is evaluating different cleanup options than the Feasibility Study and may even select a significantly different cleanup remedy than that indicated in the ROD. It is very difficult for the public to maintain its scrutiny over this process, comment on it, and influence what is happening. In the case of the Lipari site, we believe that a technically faulty cleanup selection was made because important analyses and tests were not performed as part of the Feasibility Study. Instead, EPA has said that they will occur as part of the subsequent Design Study.

Effectiveness and Cost of Cleanup Technologies

Congress has made it clear that it wants the Superfund program to use permanently effective cleanup technologies so that threats to public health and the environment are removed with confidence and repeated costly cleanup actions are unnecessary. But EPA and its contractors still have a tendency to either ignore newer cleanup technologies or to underestimate assess their effectiveness, feasibility, and reliability, and overestimate their cost. Part of this is a natural consequence of the newness of the Superfund program and, indeed, of the newness of the technical challenge of cleaning up sites contaminated by hazardous substances. There has been, for example, extensive development and testing of cleanup technologies only recently. And, because of greatly increased spending over a relatively short period of time, a literal army of technical specialists has emerged, but they have very little practical experience or even formal academic training in the esoteric technical fields needed to study sites and design cleanups. Thus information transfer is inadequate and people in EPA and contractor firms are hesitant to select newer technologies.

Nevertheless, we can improve the implementation of Superfund only if we identify problems and address them institutionally and systematically, rather than perceive them as exceptional cases, which they are not. For example, EPA could greatly expand what it does to inform its contractors about the latest cleanup technologies, or to transfer the expertise that only a few contractors may have obtained with Federal support. Equally important, EPA should work to dispell the growing myth that permanently effective cleanup technologies inevitably result in enormously higher cleanup costs. This simply is not correct. The fundamental premise behind technological development and innovation is not only to obtain better technical solutions to problems but also to reduce their costs. Indeed, this is happening in the evolution of cleanup technologies. The problem is not in the development and availability of better cleanup technologies but in not taking advantage of them.

We have pointed out in a number of case studies of Superfund sites, including Lipari, how newer, already demonstrated, cleanup technologies could be used. These technologies include: a new type of mobile thermal destruction unit based on infrared heating developed by a Texas company that is one-third to one-half the cost of traditional incineration (if EPA makes sure that contractors using it do not inflate their prices); an improved, low cost form of chemical fixation for wastes or soils contaminated with toxic metals developed by a New Jersey company (this technology recently has captured major applications in California because of that State's eagerness to use newer, effective technologies); and a very efficient way to remove volatile organics from the ground by vacuum extraction developed by a company in Puerto Rico.

Quality of Work and Technical Oversight by EPA

Finally, will the many dollars spent by the Superfund program result in effective environmental protection? As I said earlier, the newness of the technical effort, the largely inexperienced workforce, and the challenges of managing such a large program, combine to threaten the economic efficiency and environmental effectiveness of the program. Unless EPA provides many more resources for technical oversight of contractor work at all levels of Superfund--from initial site evaluations, immediate actions, studies, engineering design, and finally actual cleanup--we are likely to waste a lot of money. Some creative thinking is necessary to improve independent professional peer review of contractor work. As it stands today, EPA, stretching its resources to take action, in response to intense criticism for delays in Superfund's implementation, has not paid enough attention to ensuring that it and the public gets good work.

The new Superfund statute's provision for technical assistance grants to communities guarantees that technical specialists who have not been involved with the original work will more and more often be called in to scrutinize EPA's plans. Many people are saying that this will cause extensive delays in Superfund's implementation. If it does, it will be because of genuine problems in the quality of technical work and the effectiveness of quality control by EPA and its contractors.

SUPERFUND IMPLEMENTATION
Clean-Up Contracts; Cost Recovery; and State Cooperative Agreements

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WEDNESDAY, APRIL 29, 1987

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON SUPERFUND AND
ENVIRONMENTAL OVERSIGHT,
Washington, DC.

The subcommittee met at 9:10 a.m., in room SD–192, Dirksen Senate Office Building, Hon. Frank R. Lautenberg (chairman of the subcommittee) presiding.

Present: Senators Lautenberg, Burdick, Stafford, and Pressler.

OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator LAUTENBERG. I am going to bring this hearing to order. We welcome our witnesses.

Today we begin a series of Washington hearings on the implementation of Superfund. My work on the Senate Environment Committee and involvement in environmental issues over the years has brought home a key point: Our environmental laws are only as good as their enforcement and management. Yet too many times, the Congress approves environmental legislation only to rush on to the next order of business, and all too often we fail to monitor the agencies we have charged with significant responsibilities.

In the last Congress, I devoted a good deal of time to amending our Superfund law. I worked to improve the law in the committee, on the Senate floor, and as a conferee. And Lee Thomas, you, too, worked with me and the others to do just that, to amend it and to improve it.

Just before the 99th Congress adjourned, we approved a tough new law with cleanup standard schedules, right to know, radon protection, and we made great strides.

I am committed to seeing that the spirit and the letter of the law are vigorously implemented. New Jersey has an enormous stake in a successful Superfund program. Earlier this month, Region II Administrator, Chris Daggett, testified at a field hearing of the subcommittee. He noted that New Jersey will receive about $84 million in Superfund money this year. That is about one-fifth of all the money that is going to be spent in 1987.

But money spent does not always mean a job well done. In the first 5 years of the program, EPA spent $1.6 billion. But it cleaned up only five NPL, National Priority List, sites. None of those were in New Jersey. Today, EPA considers only 13 sites cleaned up, and only one of these is in New Jersey. Our State has 100 national priority list sites, I remind you.

The Superfund amendments were aimed at improving this performance, but some of the problems we have seen require more than a tougher law. They require, frankly, better management by EPA. This is strikingly clear with the agency's Emergency Response Contracts performance.

This involves EPA's hiring contractors to respond to emergencies at Superfund sites. We have evidence that EPA has swallowed unacceptable costs for that work. EPA allowed emergency contractors to mark up equipment excessively. One example was a two-inch trash pump used by clean-up contractors and subcontractors.

When billed on an hourly basis, the use of that pump cost the subcontractors an average of 10 cents an hour. The subcontractors charged EPA $16 an hour. If you extend that, you see a markup of 16,000 percent. The markup dropped if the pump was billed on a monthly basis, but it was still a huge 5,300 percent.

The average subcontractor markup on an hourly basis for handtools was about 6,800 percent and 3,500 percent if billed on a monthly basis. Unfortunately, this was not an isolated occurrence.

In the period from 1983 to July 1985, the EPA Inspector General documented numerous cases of these unreasonable costs across the country. Average markups on equipment for both subcontractors and contractors on an hourly basis was 321 percent. And the average markup, even on a monthly contract basis, was 143 percent.

EPA oversight of labor charges also appeared lacking. There were cases in which EPA paid for worker overtime charges which were never paid to workers.

These are examples of a contracting process that does not seem to work. The basic problem was that EPA did not try to develop enough competition for these Emergency Response Contracts. The agency did not have a system based on direct tough negotiations and reasonable prices.

The I.G. gave EPA until late December, just past, to respond to that report on Emergency Response Contracts. EPA missed that deadline. The subcommittee investigated that matter following our contacts with the I.G. and EPA on this report. EPA finally submitted the response in February. The I.G. was not satisfied, and the subcommittee continued to explore this issue.

I am pleased that our focus on the issue has already borne some fruit. EPA has finally submitted a response that appears satisfactory to the Inspector General. It calls for greater competition for Emergency Response Contracts. Instead of having just four prime contractors to do all this work, EPA will be seeking to establish relationships with 17 contractors this year and eight more in the year following.

Certainly more competition is welcome. We need that. But the results are still uncertain. None of the 17 contracts have been awarded yet, and questions remain. The key one is whether the agency has the resources to oversee and run an expanded program. If they could not manage a four-contractor program, are they going to be able to manage a 17-contractor program?

Are there other significant problems for Superfund? We think there are. One is EPA's management of the so-called cooperative agreements. That is where EPA pays the State to do Superfund work. States do not seek enough competition for Superfund work. We have documented cases where States allowed contractors to charge for and to do additional work not mentioned in the actual contracts. This amounts to significant waste.

One State awarded a contract that was $460,000 more expensive than the bid of a contractor deemed most qualified for the job. Another State sought reimbursement for about $560,000 of work that the Inspector General advised EPA not to pay. EPA has not aggressively monitored these cooperative agreements.

Another problem is cost recovery. Superfund is designed to make the polluter pay wherever possible. But the I.G. does not believe that EPA has done this. Of the $1.3 billion spent through 1985 on Superfund, only $14 million was actually recovered from those that contaminated the sites. Polluters paid for only 1 percent of these cleanups, and the Government and the citizens of the country paid for the rest.

We obviously have serious problems here, a record of inefficiency and mismanagement.

To Lee Thomas' credit and that of his predecessor, Bill Ruckelshaus, Superfund is certainly in far better condition now than it was in its first 2 years of existence. But we have to make sure that we get what we pay for in the years ahead. We need a program that exacts reasonable prices for work, that does so without slowing down the cleanup program. And we need an administration that gets behind the effort that allows EPA to spend the money Congress has authorized and appropriated.

Good management will not mean spending less overall. It will mean getting more for what we spend. The money we do not waste on noncompetitive contracts means more funds for cleanup. Good management means adequate resources to manage, having enough top-notch personnel to get the work done, to oversee the States, to negotiate successfully with contractors, to enforce the law, and to make the program run.

To gain perspective on this, it is fitting that we begin with the Administrator, Lee Thomas, EPA's head man and former Superfund chief. Lee, I welcome you and your colleagues here today. I appreciate the fact that while it is a difficult session for you to schedule—and I appreciate that effort—I look forward to working with you and the Inspector General, John Martin, to get this program back on track.

Before we hear from our witnesses, there are a couple of procedural matters. First, as the witnesses have been informed, it is our practice at oversight hearings to take sworn testimony. The oath extends to all testimony, whether given orally or written responses that may be requested at a later date.

Secondly, the record for the hearing will remain open through the series of hearings we anticipate holding over the next several months. However, written followup questions for today's hearing, if any, will be submitted no later than two weeks from today: May 13.

Third, I remind our witnesses that you will have 10 minutes to summarize your written testimony. I will not cut you off if it extends a little bit beyond. We do not have any other Senators here, so the time is ours to use.

I would therefore ask that you rise and raise your right hands. Do you swear that the testimony that you are about to give to this subcommittee is the truth, the whole truth and nothing but the truth, so help you, God?

Panel, en masse. I do.

Senator **Lautenberg.** Thank you very much. Lee, if you would take the ball back?

STATEMENT OF HON. LEE M. THOMAS, ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY J. WINSTON PORTER, ASSISTANT ADMINISTRATOR FOR SOLID WASTE AND EMERGENCY RESPONSE; AND HOWARD MESSNER, ASSISTANT ADMINISTRATOR FOR ADMINISTRATION AND RESOURCES MANAGEMENT

Mr. **Thomas.** Thank you, Mr. Chairman. I appreciate the opportunity to be with you today and commend you for beginning your process of oversight hearings on the Superfund program, the most important program to this Congress and to this country and one that I have been associated with for over four years at EPA, first as the assistant administrator that managed hazardous waste programs and for the last two and a half years as administrator of the agency.

With me today on my right is Howard Messner, who is my Assistant Administrator for Administration and Resource Management and, as such, is responsible for all contracting and finance issues, both the Superfund and other finance and contracting issues in the agency. On my left is J. Winston Porter, who is the Assistant Administrator for Solid Waste and Emergency Response and, as such, is the primary manager for the Superfund program in EPA. They are available with me to answer any questions that the Chairman has.

What I would like to do first is briefly summarize my written statement, which I would hope would be submitted in full in the record.

Senator **Lautenberg.** Indeed it will be.

Mr. **Thomas.** Mr. Chairman, first, I want to briefly give a program overview of where we are today. As you say, this is the first Washington hearing on the oversight of the new Superfund, so I would like to talk briefly about where we are with the program. Then I would like to talk about the specific areas of interest that you have asked us to respond to, the Emergency Response Contracts and that program, our cost recovery program as a part of our enforcement efforts, and our overall state cooperative agreement program.

But first, let me say that the challenge I think we have in EPA today is the same challenge I saw 4 years ago when I came to the agency and began to manage Superfund. That is a challenge to manage a large, complex program that includes many managers at State and Federal levels, a program that can respond to the tremendous demand we have for action, demands by the public, demands that we place upon ourselves and demands that Congress places upon us, while at the same time maintaining cost-effectivess and program and financial accountability.

That is our challenge as managers in EPA. That is a challenge, frankly, I think we are meeting.

The Inspector General's reports, which you cited, are reflective of a good, strong Inspector General. EPA has the best, in my opinion. He is doing exactly what an Inspector General should do in an agency, exactly what I have asked him to do. And that is to go forward, just as we do on the management side, on the audit side to look and find where we can be more efficient, where we have got problems in managing this large, complex program, and he has come forward with recommendations.

In many of those areas, we already were moving to take action. In other areas, he pointed out where we should take additional action or areas where action should be initiated or recommendations on what action would assure more cost effectiveness or more accountability.

We are here to discuss today, is how we are managing this program to meet that challenge, how we have responded to some of the issues that the Inspector General has raised, and how we responded to questions that you, in your responsibility as overseer of this program, have.

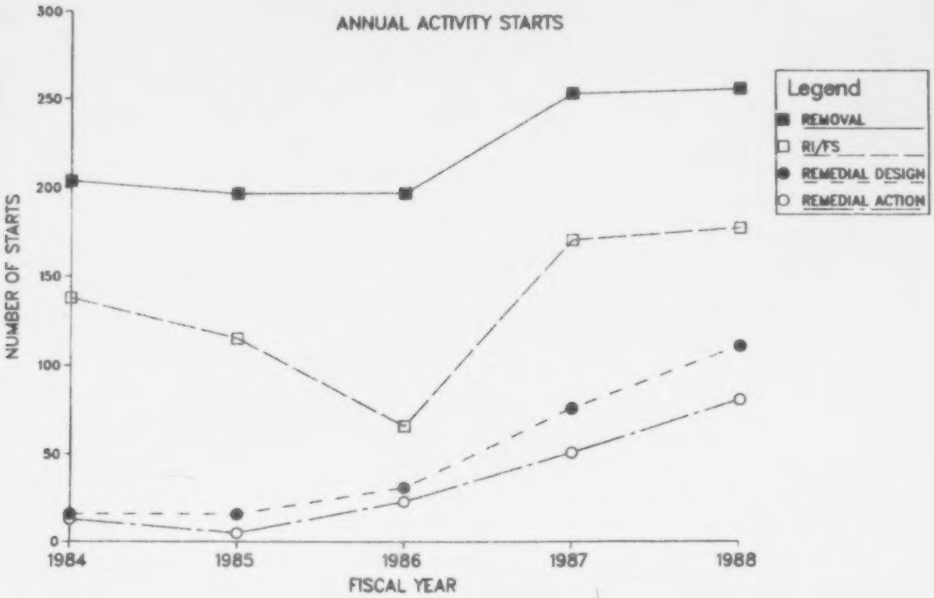
The program, I think, is moving back to a strong level after about a year and a half of slowdown prior to the reauthorization of the program. The removal program, which is our emergency response program, has moved back up and we are close to the 250 sites a year that we have set as our goal.

Our engineering studies at National Priority List sites, after a sharp decline when we were waiting for reauthorization, have moved back up in 1987 to the level which we have set as our goal, which is consistent with the goals that Congress gave us in reauthorization, up past 150 new site starts a year.

Our remedial design program, which is once we have determined the actual cleanup decision, also is moving up strongly to hit the targets that we have set.

Our Remedial Action Program, which is the actual cleanup of the sites once that design has been initiated, also is back on the upward trend, hitting the targets which we have established for this year.

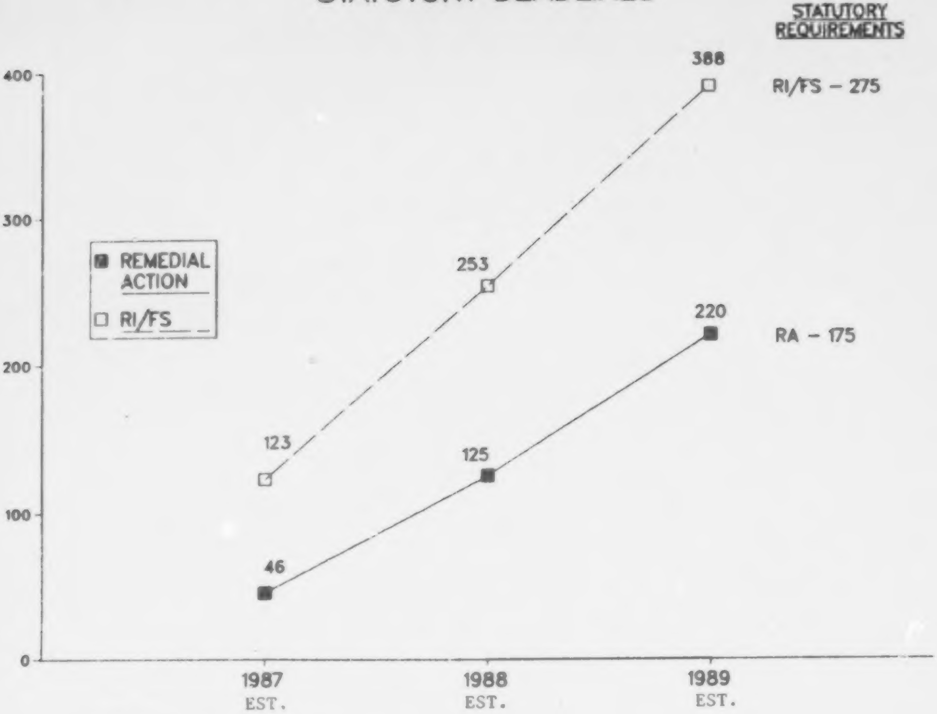
THE FY1987–88 SUPERFUND BUDGET ALLOWS THE AGENCY TO REGAIN ITS MOMENTUM AFTER THE DELAYS OF REAUTHORIZATION



Mr. THOMAS. As you know, Mr. Chairman, from the hours that you have spent in reviewing the status of the Superfund program since you have been in Congress, the engineering study, the design phase and the cleanup phase are all a part of a fairly long time frame that ultimately results in cleanup of a site, ultimately results in taking that site off the National Priority List. But in the majority of cases, that process is a lengthy one, on average, exceeding five to six years.

There were targets set in Superfund II; how many new sites would we begin, as far as engineering studies are concerned, and how many new site cleanups would we actually initiate on National Priority List sites. As you can see from this chart, we are not only on target but we are exceeding target as far as our projections are concerned, based on what the statutory requirements were.

WE PLAN TO EXCEED THE 36 MONTH
STATUTORY DEADLINES

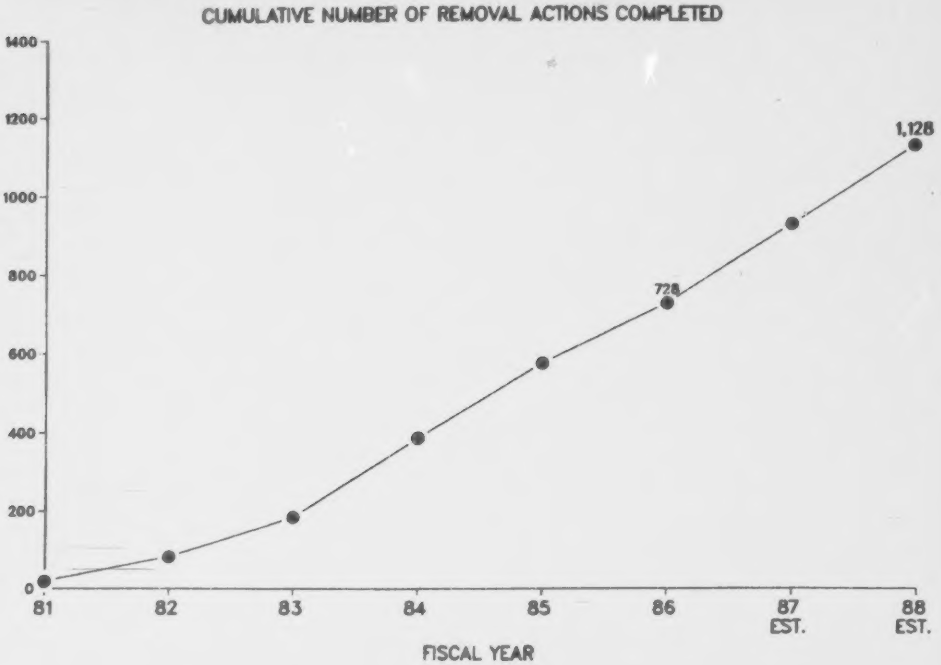


NOTE: FEDERAL FACILITIES NOT INCLUDED.

Mr. THOMAS. The remedial investigation feasibility study starts, which are the engineering studies at the National Priority List sites, we anticipate exceeding the statutory targets by over 100 sites. The remedial action, actual cleanup initiation at a site, we anticipate exceeding statutory target by approximately 50 sites. These are currently targets that are not only reflected in our planning but are reflected in our budget request to Congress.

One of the things that we need to think about when managing this program is the size of the program. We not only have new site starts as I indicated from the last chart, we also have an ongoing process of managing existing projects, in that those projects last a number of years once we start them. That includes both the removal projects as well as the remedial projects.

If you look at the removal projects, which is one of the areas you want to focus on today, it is the program that we try to make most responsive to the immediate public health or environmental problems at sites. It is the part of the program that we can respond immediately with action. And as you see, we moved that program back up to nearly 200 to 250 sites that we will attempt to clean up under that program each year.



AN EXPANDED REMOVAL PROGRAM WILL COMPLETE AN ESTIMATED 400 ACTIONS OVER THE NEXT TWO YEARS

Mr. Thomas. We have identified problems in the past as to how that program was being managed. You enumerated some of them. I can tell you that as far as bottom-line costs at sites, we feel we have gotten a good price. You can go into an individual contract and you can talk about how much we paid for one piece of equipment versus another. But bottom-line cost, we got a competitive price.

We also, however, feel competition is a major issue in those projects, and we are moving to expand the competition. We are moving to expand oversight and management. We will double the number of contract managers we have on that staff to look at those projects, oversee those projects, from a financial management point of view this year. We will move to put in and are putting in better cost accounting systems. We are looking at requiring better cost accounting systems on the part of our subcontractors.

But bottom line, we think we have got good prices for the work done, competitive prices, with what the private sector and other government agencies are paying. We are going to work to improve that record.

Senator Lautenberg. Lee, before we leave that, I wonder if you would in synoptic form just define removal versus remedial. I think for people who are not as familiar with these programs as you and I and others are, removal sounds like the ultimate action. Obviously, that is not the case.

Mr. **Thomas**. That is a good point, Senator. The removal program is the emergency response program in Superfund. It is the program. It does not require a match on the part of the State government. It is 100 percent federally funded or 100 percent funded by responsible parties. But it is that portion of the program in the law that was identified to respond to a problem that requires an immediate action.

Now, the definition is one that is broad. What is immediate action? It actually can extend out to a year. It can extend up to over $1 million at a particular site. Congress gave us broader authority under the new law than we had under the old law. The old law was six months and up to $1 million, and that has now been expanded.

But it is the part of the program that one has to respond to an immediate situation. In other words, if you have a problem at a site, say an explosion, or you find a site where you have got hazardous materials or hazardous waste that is presenting an immediate problem to the public, we can respond under this program.

But we also can respond to this program where we have a problem that we think over the next three to four months will present an environmental program. So it is the program that is a more immediate response program as opposed to the remedial program which is the more long-term cleanup and the one, when we talk about our National Priority List sites, we look to the remedial program as the one that is going to deal with the long-term consequences at the largest sites, which are remedial sites.

A removal actually may be conducted at a remedial site to stabilize that site. So there is some overlap between the two.

Senator **Lautenberg**. It does not necessarily mean physical removal, however.

Mr. **Thomas**. It can, but not necessarily. As a matter of fact, we are emphasizing more and more the treatment and disposal of the waste in many areas on site. In the removal program, you will find that more of the waste is actually removed from the site and taken to a treatment facility offsite than in the remedial program.

Senator **Lautenberg**. It needs a change in nomenclature, I think. It is really stabilization. That is what the mission is.

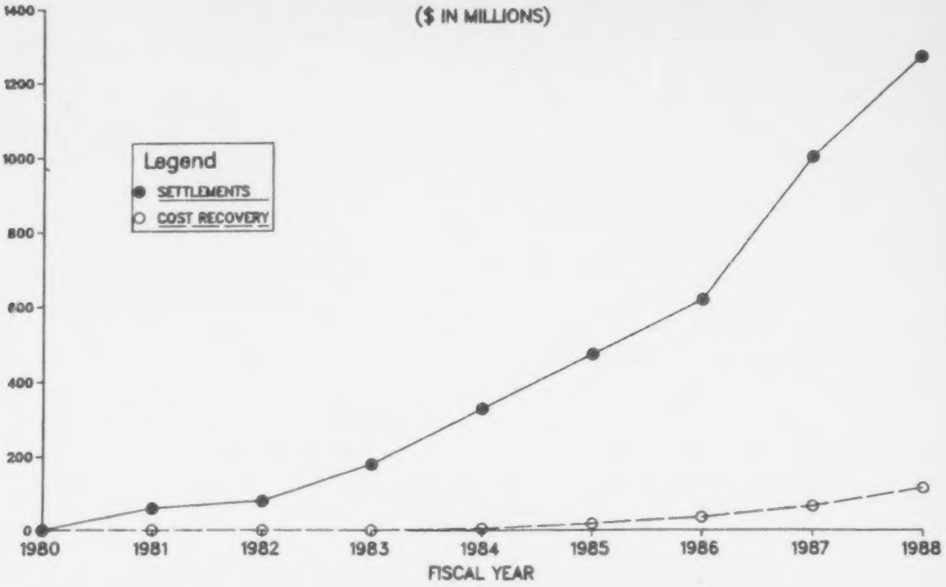
Mr. **Thomas**. It is stabilization, but it is also destruction. You will find in the majority of these sites we actually had finished the cleanup at the site. We actually took the waste, took it to an offsite disposal facility and finished the cleanup at that site.

Senator **Lautenberg**. Thanks, Lee.

Mr. **Thomas**. The second issue that I wanted to emphasize today is the enforcement program. The enforcement program is one of the important parts of the Superfund program. When Congress reauthorized it last year, you strengthened these parts of the program.

Payment by responsible parties for cleanup wherever we can find them is a critical part of our program. As you can see from the top line, we have accomplished this at nearly 400 sites for over $600 million, through settlements. So the up-front enforcement program, to try to find responsible parties and get responsible parties to do the work, has been a major part of the program over the last 5 years and will continue to be.

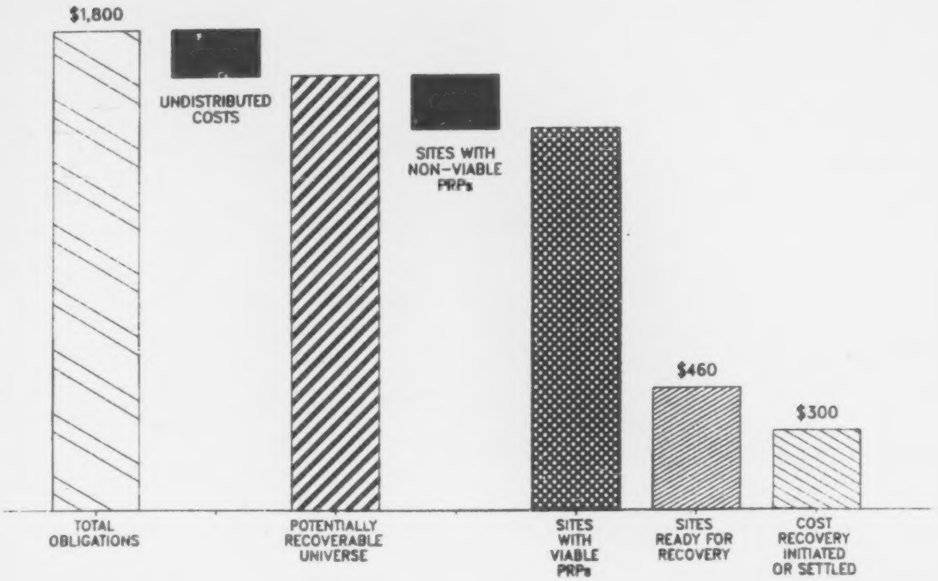
SETTLEMENT VALUES ARE EXPECTED TO INCREASE BY MORE THAN $600 MILLION OVER THE NEXT TWO YEARS. COST RECOVERIES MAY APPEAR SLOW, BUT....



The second part of the program, which was focused on by the Inspector General, is the cost recovery program. That is where a responsible party has not been found and we use Superfund money, then we actually go after the responsible parties to recover that money through courts. It appears it is small when you look at the line at the bottom, but let me explain to you why that is the case.

The cost recovery program is the program we use once we have expended the Superfund money. I have already indicated to you the kind of time frames required to complete remedial action, which is where the largest part of the money is concerned.

Look at this chart: $1.8 billion obligated in the first 5 years of the program. Of that, you have got a portion that we call undistributed. That is, it is not distributed to a particular site. For instance, our research and development program on hazardous waste is not a site-specific program. It is a broad authorization Congress gave us to do overall research and development under Superfund for hazardous waste cleanup. It is undistributed.



WE ARE PURSUING 65% OF THE COSTS READY FOR RECOVERY

SUPERFUND OBLIGATIONS VS. ESTIMATED COST RECOVERY UNIVERSE ($ IN MILLIONS)

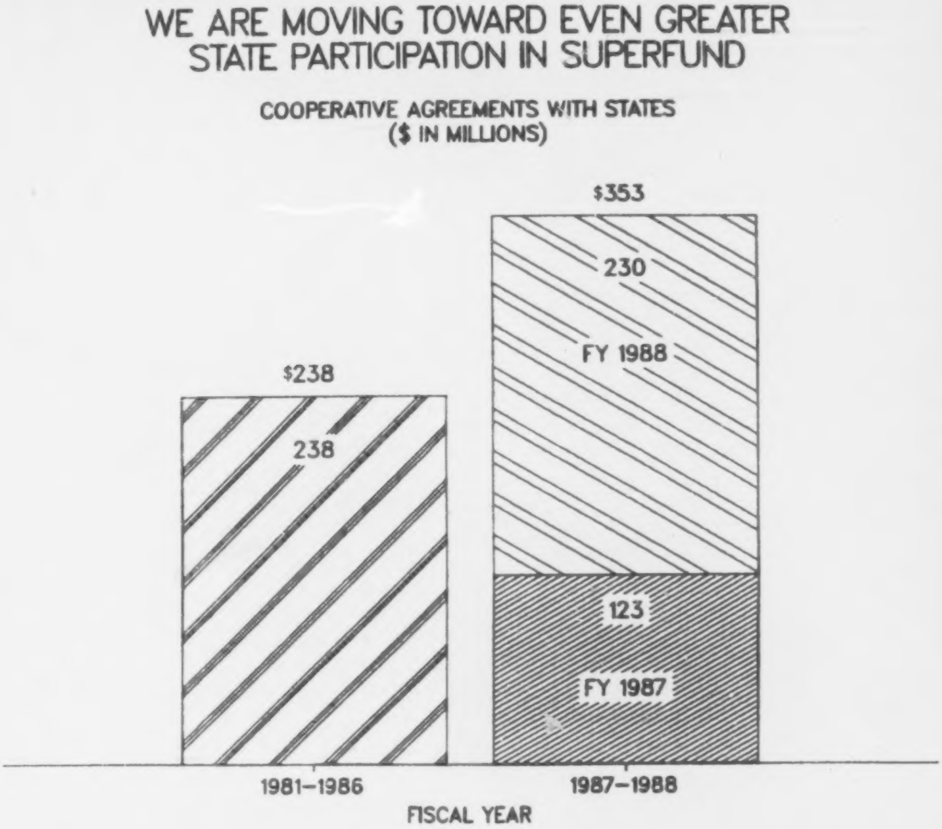
Mr. THOMAS. Most of the money, however, can be distributed: direct site costs, an indirect cost rate for the agency. A portion of that, however, is sites that do not have viable responsible parties, Potentially Responsible Parties, PRPs. So there is nobody at that site that we can get the money back from. Often we cannot find the PRPs or the PRPs may be bankrupt.

We still have the majority of the money that can be allocated to responsible parties. Of that, we are at a stage where at this point we have got about $460 million of the $1.8 billion that is ready for recovery. In other words, we have finished the work at the site, we are pulling the documentation together and preparing the case.

We have actually moved forward with the Justice Department now on about $300 million. That goes through the judicial system. Of that amount, we have literally recovered about $50 million. We have got about $250 million that is in the case process. In other words, it has been filed with the court or it has been referred to the Justice Department or the case is actually moving through our process.

So when you look back at that last chart and you see the cost recovery line at the bottom is small, it is because of timeliness. That line will move up, in our projections. Over the next 5 years, a substantial amount of the money will be recovered. As you look over the last several years, you can see that program picking up.

The final issue you have raised that I wanted to respond to is the issue of State cooperative agreements. The Superfund program is a big program. A big part of managing that program, I believe, should be handled by the States. It is large. Many of the States have very strong capabilities to respond to these problems, just like your State of New Jersey, and, working with them, I think we can share the responsibility for managing site work so we can get more work done.


WE ARE MOVING TOWARD EVEN GREATER STATE PARTICIPATION IN SUPERFUND

COOPERATIVE AGREEMENTS WITH STATES ($ IN MILLIONS)

Mr. THOMAS. The way we do that under the Superfund program is through a cooperative agreement. We have found, and our Inspector General has found, that we need to strengthen aspects of that cooperative agreement program. We are doing that through training programs, through procurement exercises with state governments, through preaudits with state governments, through ensuring that we have better guidance, through ensuring that we strengthen the cooperative agreement document itself. All of those things are under way.

I must tell you that my intention is to expand the role of state government in managing the Superfund program. I believe there is strength there. I believe we can get far more work done if we both use the strengths we have got.

As you can see from this chart, during the first five years of the program nearly $240 million was managed by the states for site cleanup under cooperative agreements. In the next two years of the program, this year and next year, I intend to exceed that figure substantially. Next year I intend to award under the cooperative agreement program nearly as much as we awarded under the first five years.

So strengthening our oversight of states, strengthening the guidance to states, strengthening the document and the training for states on how to manage those cooperative agreements are all essential parts of our program.

So in summary, Mr. Chairman, I feel the program is a large program and is certainly growing larger. It is a challenge for EPA. It is a challenge for the state partners. It is a challenge for oversight committees, such as your own, to ensure that the challenge that I laid out initially is met. And that is that we manage a large program, we ensure that it is responsive, as much response as possible to the demands for action, while also ensuring the integrity of the program from a financial and program point of view.

Again, I appreciate the opportunity to be with you, and I appreciate the fact that you asked our Inspector General to share his thoughts with you after we conclude. My colleagues and I would be pleased to respond to any questions you have.

Senator LAUTENBERG. Thank you very much, Lee.

The charts are interesting and, at the same time, I think somewhat provocative, especially the one that deals with the cost recovery. We will talk about those several things as we go along.

In the beginning, in my opening statement, we talked about some of the contractor markups. They run, as I indicated, even up to 1,000 percent for equipment use. The average markup for contractor-owned equipment is 320 percent. In some cases, contractors charge you for overtime work but they did not pay their employees at an overtime rate, at time-and-a-half rate.

You did say that you were putting in a better cost accounting system. Did I quote you correctly?

Mr. THOMAS. The issue has to do with both our oversight of payments to contractors and subcontractors, but the cost accounting system is the system that the contractor is required to have. It is a contentious issue, because when we competed our contracts, as do most other government agencies, we competed it based on bottom-line prices that we were going to get for work. We looked at proposed rates to be charged. We looked at how overhead would be incorporated into those rates.

But we were competing on bottom-line cost to be sure that we were getting a good price for the government as opposed to the individual components. We are going further. Your question asked how much further.

Senator LAUTENBERG. The question that I asked is in response to something that you said, and I am just trying to set the tone so that we understand one another here. That is that you said you have improved or are in the process of improving your cost accounting system. Did I hear you correctly? Your colleagues say yes.

Mr. THOMAS. You heard me correctly, but it is not only our system; we are also requiring modifications by our contractors and subcontractors.

Senator LAUTENBERG. A change in process, a change in procedure, that is going to enable you to get a better handle on it, you said.

Mr. THOMAS. That is correct. I want you to understand, though, that there is the potential of difficulty in getting subcontractors and contractors who are willing to keep the level of detailed cost accounting that we are looking at requiring.

Senator **Lautenberg**. The fortunate aspect of this part of my senatorial opportunity is that I come from the corporate world where I did some of this, so in this case we are dealing with an area of some familiarity.

When we talk about improvement in the systems, it does say that the systems as they existed before this were not quite at the level that we want them to be. And these violations, whether they are de minimus or not, suggest—and Lee, I know that you are, if not a student of management, a practitioner of good management process. And when you say that improvements are in order, backed up by the fact that we had these glitches along the way, it says that there was a problem in the past.

Mr. **Thomas**. You are right.

Senator **Lautenberg**. So at this point, with having looked at some of these incidents, are you confident that you have taken the steps to totally eliminate these overrun figures? Where are you along the path here? Are you halfway through? We are going to be talking next to the Inspector General, and I was pleased to hear your overview as to what his job is. You know that he has the responsibility that makes us all function better, we hope. So how far along the way are you to having a totally airtight system? You may never achieve that level.

Mr. **Thomas**. Howard, why don't you give him an overview of that?

Mr. **Messner**. Mr. Chairman, I think we are making very good progress. Before I describe the progress, I would like to briefly comment on your observation that if we are improving and changing our system for getting detailed cost information, does that not indicate that we had a problem. The answer to that is yes, it did indicate that we had a problem. And as the Inspector General did his work and we began to understand some of the issues that we had not addressed, we have taken countermeasures to deal with them.

But there is a point that has to be made that is very important to the federal interest in this. The way we ran our contracting system, as we received bills from individual contractors—and let me say that, having looked at a lot of the work, they are, for the most part, first rate. The contractors that we have used have struggled very hard to do new tasks. They had a lot of unknowns. They took a lot of corporate risks. This was not a well-defined piece of work.

Senator **Lautenberg**. How do you define or explain "first rate"? Are you talking about regardless of cost, including cost? You have not really had a very good opportunity to test that. There is not a lot of experience out there so far.

Mr. **Thomas**. In this case, Senator, you are talking about work at over 700 sites.

Mr. **Messner**. Yes, sir. With their responsiveness, and as we have talked to our project managers and our regional offices and the people who oversee these contractors, the substance of what they have done, given the circumstances that they are struggling with in a new field, based on my experience, some 25 years looking at these problems, they have responded, for the most part, extremely well.

In the cost area, we have an ongoing discussion with the I.G. of profitability. Profitability on a particular item, as I am sure you know from your experience, does not mean you are making money on the contract overall. The system that we have in place says: we will pay the bill; the I.G. will then come in and do a price audit; if in our judgment, the government's judgment, we have been overcharged on any item, we routinely recall those funds from the contractor. So there was built into the system a recognition of the possibility that particular items would be disputed and the government's interests should be protected.

Now, having watched the I.G.'s audits—and I can tell you, as he will testify, that he and I have spent more time together on this issue than on any other subject within the EPA in my four years back at the agency—having looked at his material, we have decided that it is more in the government's interest if we can build up the cost data from the contractors that Lee was talking about to really move away from the fixed price, which may allow for high costs.

Senator LAUTENBERG. Fixed price, not fixed contract.

Mr. MESSNER. Within the contract.

Senator LAUTENBERG. You are talking about fixed costs for labor, equipment, materials, etc. That kind of terminology bothers me a little bit, I must tell you, because when I hear fixed cost I hear a million bucks for this job, let's do the whole job, and whatever the components are, they are. But what you are referring to as fixed price is the labor rate, the equipment rate and so forth.

Mr. MESSNER. That is correct.

Senator LAUTENBERG. Without any cap on it does that cause the contractor any urgency, any concerns, other than his own good reputation, that is a kind of subjective thing. There is no pebble in that shoe to get the thing done soooner.

Mr. MESSNER. Except the comparison of performance between contractors, which we constantly monitor, and the audits that we do of those costs after the fact. And as I say again, the government's interest is protected, because if we find out, as in the case that you cite, that a pipe was overcharged—and we believe in that case there well may be an overcharge; the cost that he was dealing with, we believe, probably should have been in the range of $20 to $40 a day for that piece of equipnent, because you have to figure in things other than the actual piece of equipment: maintenance, indirect costs—if we feel that we have been overcharged, the government has not closed the matter until the audit is complete. We will go back and get that cost.

Now, it would be much better to set up, as you suggested, an incentive system so that costs are held to a minimum while the work goes on. I think that level of sophistication has to do both with our learning experience in these first five years, the state of an industry which has not traditionally been doing business that way, and bringing about the kind of financial improvements to, as Lee pointed out, not only our system but to the contractor system.

I conclude and I thank you for letting me speak so long.

Senator **Lautenberg**. I want to interrupt. We have the Chairman of the Environment and Public Works Committee here, Senator Burdick.

Senator, would you want to make an opening statement? We certainly welcome that, if you would like to, and we will then pick up after that with the questions.

Senator **Burdick**. No, I have no opening statement. I am pleased to see Administrator Thomas again. We have been in a lot of hearings together.

There is one area, if you want to enlighten me a little bit. How have these State cooperative agreements been working out?

Mr. **Thomas**. Senator, the State Cooperative Agreement Program, we feel, is an essential part of the program and one that I would like to see expanded. We have identified some problems with that program, some problems that we are trying to overcome, and I think we will.

The problems largely have to do with the state procedures being consistent with federal procedures on things like procurement, state personnel being fully versed in the management of the program as we expect it.

Now, we are putting in place a number of things that we think will overcome the problems we have identified. But our projections are to expand significantly the state cooperative agreement program, because that is the program that we intend to use to try to expand state involvement in managing the larger number of sites that we have now got to manage.

We also, under that program, hope to basically fund a core capability in a number of the strongest states to fund an ongoing cleanup activity in those states in conjunction with the federal cleanup program.

Senator **Burdick**. I think it is a very important portion of the program. I am glad that your testimony gives it a positive rating at this time.

That is all I have, Mr. Chairman.

Senator **Lautenberg**. Thanks very much, Chairman Burdick.

Senator Pressler has come in. We are in the middle of questioning here, Senator Pressler, but if you have an opening statement, we would certainly welcome it.

OPENING STATEMENT OF HON. LARRY PRESSLER, U.S. SENATOR FROM THE STATE OF SOUTH DAKOTA

Senator **Pressler**. I certainly want to follow the line of questioning. But I want to say at the onset that I want to commend you, Mr. Chairman, for these hearings on oversight. My State has had use of Superfund in some instances but not as much as many other States. We do not have as large a problem as some other states have.

But I think that the fact that Congress reauthorized the Superfund program last year and that reauthorization significantly increased the cost and scope of the program is important. As a result, approximately the same amount of money will be spent in 1987 as was spent over the previous five years under the Superfund program. So with that sort of an increase, it is very appropriate that we should have close oversight.

When funding for any program increases so dramatically, it is critical that precautions be taken to assure that the increased funds are properly spent. I am encouraged by the steps taken by the EPA to eliminate potential abuses in the program. I look forward to hearing how these steps have worked and what future actions the EPA plans to take in this area.

I am particularly interested because I am very concerned about the environment and about what occurs when there are problems. We have a substantial pipeline leakage problem in Sioux Falls, South Dakota now, which is not under this program. But the citizens are very concerned about the quality of water, water for human beings to drink and use, the quality of air, the quality of the environment that we live in in this country.

We can only be competitive with the Japanese if we do have a good use of the Superfund program. So I am glad to be here, Mr. Chairman, and I commend these hearings. I hope to help out as much as I can.

Senator LAUTENBERG. Thank you very much, Senator Pressler.

Lee, let me go back to fundamentals here. You presently have four zone emergency response contractors. You have divided it up into four emergency zones, and they are now presently populated with four emergency contractors.

Mr. THOMAS. What we did, Senator, is we were looking to have a response program, emergency response program, of contractors who were qualified and able to respond within 24 hours to any response required, actually a two-hour mobilization capability, because we wanted them to be able to respond to the immediate emergencies I talked about as well as any of the other emergencies that would fall under our removal program.

We competed. We set the country up in zones. Each of those zones, four of them as you indicated, had one prime contractor with a series of subcontractors to respond to those programs.

Senator LAUTENBERG. Does that include Alaska in the zone?

Mr. THOMAS. Yes.

Senator LAUTENBERG. What kind of geography are we talking about in these zones?

Mr. THOMAS. Mr. Porter, do you want to speak to that?

Mr. PORTER. Most of these zones are related to the eastern part of the country, the more populated parts. There is a large contract for most of the West, including Alaska. But they have different offices.

Senator LAUTENBERG. What is the smallest zone perimeter?

Mr. PORTER. I do not know exactly. The Northeast would be the smallest, geographically, because that is where you have the greatest concentration.

Senator LAUTENBERG. Where do you start the Northeast?

Mr. PORTER. I do not know the exact details. I can furnish you a map on that.

Senator LAUTENBERG. It is obviously the kind of a base network structure to work from.

Mr. THOMAS. There are numerous subcontractors who are qualified under each of the primary zone contractors. The zone contractor manages the overall network in his zone. As Win indicated, when the zones were established, we looked at projected work, how many sites did we think there would be, and we looked at geographic coverage.

Now, the amount of work projected is what drove the size of the zones, probably more so than geographic coverage. Three of the zones are basically from Chicago east, and the fourth zone is from Chicago west, including Alaska.

Senator LAUTENBERG. Those are the areas in which we will call someone if we have an emergency, we need containment or stabilization or, to use the broad term, removal. So there have got to be some readiness costs included in those.

Mr. THOMAS. A large part of the requirements that we built into our zone contractors was the requirement for immediate response, as I indicated, an emergency response. So you are not talking about a contractor, say, a typical contractor who would go out and bulldoze a site; you are talking about a contractor who can manage hazardous materials at a site.

So they have to have the emergency response capability for hazardous materials and the readiness response of a two-hour response time.

Senator LAUTENBERG. Certainly it does not seem, at least on the surface, to be the most efficient way when it is spread out that far, because of the distance and problem of moving equipment and moving the personnel.

Mr. THOMAS. What happened, Senator, is in many of those cases the contracting has designated subcontractors who handle various parts of the zone. So it is not that we are moving equipment from one part of the country to another part of the country; you are using equipment in a location where you have subcontractors who respond. You may have a zone contractor who responds by overseeing a sub on a site with personnel.

One of the things that we have done, though, and one of the things that I think is going to be more responsive under our recompetition, is we have looked at the types of response, and we have determined that all of our contractors do not need to have the two-hour response capability. We can divide up types of response so that we can have longer lead time. Therefore, we think we will get a better price. We will also expand the competition by the number of contractors who feel they will be able to respond but not necessarily in the time frame that we have required under the earlier contracts.

Senator LAUTENBERG. You are going up from four to 25 reasonable response contracts.

Mr. MESSNER. That is correct. It is 17 this year, Mr. Chairman, and eight next year. One of the 17 has already been awarded; the rest will be awarded by the end of the year.

Senator LAUTENBERG. I wonder how well prepared EPA is to do this. Again, this oversight is intended to expose problems for all of us to make sure that, A, there is comprehension of what is out there, and B, that we try to fix it.

We have seen some of the problems that have occurred managing four emergency response contractors. I am concerned when we take this up, and I agree with you that we ought to be taking it up to a larger number so that the distances are reduced and we have more competition. I think the lack of competition has cost the government a lot of money. I think you would find that hard to refute, because wherever we do not have enough competition, we know that we have to pay heavily for the few that are there that supply services.

But are we going to be able to manage the 17 contractors and then the 8 in what I hope is going to be a better fashion?

Now, it is my editorial comment, because we have seen that it is not just the numbers that suggest we have a problem, the distances, et cetera, but we have seen these problems erupt where there are the incidents of overcharge.

I happen to believe that in management, an important factor in the consideration of the way you run things is to measure critical incidents. If you see enough problems coming up, you have got to say, hey, there is something wrong with the basic system.

So are we going to be able to manage?

Mr. **Thomas**. I think we can, Senator. Your concern is a legitimate concern, one of the same ones that I had. I think there are two elements to dealing with it. We operate, as you know, out of ten regional offices. We have on-scene coordinators in each of those offices who are basically the program managers for one of these kind of emergency response sites.

What we have done is we have not only expanded the number of those program managers to better manage the substance of the work that is done by these contractors, but we have now more than doubled, this year, the number of financial managers or contract managers that will be available in our regional offices, putting them in our regional offices, not only to manage the procurement or the process of selecting contractors but, importantly as well, the actual work of the contractors that is ongoing.

So as we indicated earlier, we are changing the requirements for keeping cost data that the contractors will have to maintain and we are expanding our staff who will oversee and manage these contractors out of our regional offices.

As we have looked at both, I think that not only will we improve price through expanded competition, through taking a look at the requirements we have got and having requirements that are more reflective of the work to be done as far as readiness is concerned, but also expanding the staff in each of our regional offices significantly to oversee the work that these contractors will do.

Senator **Lautenberg**. Is it correct that EPA is having problems in getting contractors to do good cost accounting?

Mr. **Messner**. Most of the contractors who are involved in this field do not have other uses for the kinds of cost accounting systems that would produce really finite data for us. They do not market their wares that way. This industry is a bottom-line pricing industry, and it usually competes based on comparative costs: what one company will charge versus one other company.

Senator **Lautenberg**. That is not comparative cost; that is comparative price.

Mr. **Messner**. You are quite right.

Senator LAUTENBERG. They are saying, here is what the market will bear and therefore that is what we have got to charge—or that is what we have an opportunity to charge.

Mr. MESSNER. The marketplace competition, if there is enough competition, will act as a natural brake on pricing. And that has been the nature of this industry. As we expand our work and put in all kinds of new requirements and dollars into the industry, we have pushed on the industry to begin to develop the kinds of accounting systems that we not only can turn over to the I.G. to audit but that we can have confidence in.

I personally think they will respond and respond because the Federal Government is saying: we want it and we will not do business without it. They will respond because the nature of the size of the Federal commitment in dollars is very attractive to a larger proportion of companies than it used to be.

Senator LAUTENBERG. It is essential that we have good cost accounting if we are going to be sure where the money is going. Our mission is not to fatten up the contractors 'profits. We want to try to save money.

Mr. PORTER. Senator, I want to be sure that one point is clear. That is that there is a tension here, as Lee has indicated, with these kind of companies as to how far we can push them in terms of accounting. I have certainly had a number of them come to me saying, we do not operate that way with about three-fourths of our work. Most of them say that about three-fourths or 80 percent of their work is with private industry. They are used to charging on a rate for a piece of equipment or for a cleanup on a job basis.

We are pushing them fairly far—and I am all for that—in terms of accounting procedures. But I have had a number of them come to me and say we just do not want to do business, we can do business with the private sector without having that kind of accounting, we do not have those kind of books.

What I want is a lot of competition. We had 200 people who came the other day to a meeting and said they want to work in this program. So we are trying to skate kind of a fine line here between the competition aspect and taking fairly small businesses, in fact rather small businesses, and saying we need this real elaborate accounting system.

Senator LAUTENBERG. These are sizable contracts. If these guys are not doing anything else but waiting for the government to issue a contract, we have one heck of a problem on our hands. But for them to suggest that in the private world they can go out and do T and M, time and materials, bidding on jobs, I do not think is frankly honest. If it is akin to a fire company's response to a fire, of course you cannot do it.

But there ought to be more organization to this than to simply say okay, raise the flag, here is an emergency, and call in the contractors and we will pay whatever they want. That is not what we want.

Mr. THOMAS. That is certainly not the way we have operated and is certainly not the way we intend to operate.

Senator LAUTENBERG. I do want to acknowledge the presence of our beloved former Chairman here. We have all seen the response, Senator Stafford, that you got in going. I assume that you had just as enthusiastic a response in coming some years ago. If there is anything that you would like to say by way of an opening statement, I would appreciate that. Otherwise, we will go on.

Senator STAFFORD. No, I have no opening statement. Thank you, Mr. Chairman. I am interested in what is being said this morning because of a long interest, as Lee Thomas knows and you know, in Superfund. I have another matter on which I wish to direct a question to Mr. Thomas at the appropriate time.

Senator LAUTENBERG. You can appropriately be described as, if not the father of, certainly a parent of Superfund. Everyone knows how much work you have done on behalf of the environment. We are always grateful to see you.

Senator STAFFORD. Mr. Chairman, at times I think the program was considered somewhat illegitimate.

Senator LAUTENBERG. We are not allowed to use that kind of language.

Senator Pressler?

Senator PRESSLER. Mr. Chairman, I have two questions. And I do apologize. I am moving between two or three committees this morning.

In my home State of South Dakota, the Whitewood Creek in the Black Hills, has been listed as a Superfund priority item. Extensive studies have been done in the area. The studies have concluded, as I understand it, that leaving the mine tailings in the stream and ground will result in less damage than trying to remove the tailings.

If this recommendation is followed, will the site remain on the Superfund list, or will its status be changed.

Mr. THOMAS. Mr. Porter you may want to fill in behind me, but I know that is a site we have worked with the state on for a long time. It is a contentious site. It is one that if there was a determination that no action should be taken at that site for the reason you mentioned—in other words, action may actually aggravate the problem rather than resolve the problem—then you would go through the process of actually proposing to delist that site, which means to take it off the Superfund list.

Mr. PORTER. I do not think I can add too much to that, Senator. We are taking a look at that site now. There are a number of alternatives, as you suggest, and we are working closely with the state and others to try to decide what to do. But we will go through a number of options. And as Lee indicated, depending on what they turn out, we will either start the delisting process or we will have to start some remedial process.

We are very concerned about those kind of sites in the sense that, as you point out, a massive removal of huge amounts of tailings may not be the best thing environmentally. So we would have sort of special considerations at those kind of sites.

Senator PRESSLER. In general, switching to a general subject, while the removal program is certainly an essential component of the overall Superfund program, a substantially larger amount of money will ultimately be allocated to remedial actions, as I understand it.

What steps are you taking to improve control of management in this area? And will the remedial actions—as I understand it, that includes where ground has been contaminated and you have to restore the ground, so to speak, or where water has been contaminated, you have to restore the water to a good quality. That seems to me that it would be even far more expensive than the removal programs where you just remove the chemicals.

Mr. THOMAS. It is, Senator, far more expensive. The remedial program is a far more time-consuming program because of the extent of the problem you have extending, generally, at each site over a number of years. Over half of these sites, we find, do have groundwater contamination. And generally that extends, as far as the cleanup of that groundwater, an even further period of time and is very expensive, as you indicated.

We are taking the same kind of steps in reviewing our contractors and accountability and oversight of the contractors under the remedial program that we are taking under the removal program.

There are different requirements for those contractors, and a large part of the difference is the responsiveness requirement, readiness requirement of the removal contractors. But you have the same kinds of requirements for remedial contractors, and that is their ability to actually deal with hazardous waste and hazardous materials at these sites.

But you are talking, on average, probably a ten-to-one cost factor when you compare remedial to removal, probably that much more expensive at a remedial site.

Mr. PORTER. Lee, could I just add one thing to that?

Senator, one thing I want to mention that I think is important here, too, Senator Lautenberg, is that we are, in the remedial program as well as the removal program, moving to much more competition. We have had zone contractors also in the remedial program. And instead of the four or five of those or in addition to those, we will be adding a number of new contractors in that program, starting with EPA Regions III and V.

We are also going to be moving more toward a project management approach where we have a contractor who has overall management of the technical effort at the site. This is one thing I wanted to do instead of having quite as many people involved at a site, so we can move the work more quickly.

Senator PRESSLER. Thank you very much, Mr. Chairman.

Senator LAUTENBERG. Thank you, Senator Pressler.

Senator Stafford?

Senator STAFFORD. Thank you, Mr. Chairman.

Mr. Thomas, without cost recovery, Superfund becomes, in effect, just a public works program. Much of our effectiveness of the law's liability provisions in terms of changing industry is lost without recoveries. I think you would agree with that.

Can you tell us how many dollars you have been able to actually recover in the Superfund's 6 years of existence?

Mr. THOMAS. Senator, let me ask to have this chart put back up and let me point out a couple of things. This chart shows the overall enforcement program.

The first thing is that as far as enforcement is concerned, we both look at getting money from the responsible parties up front before we expend fund monies. In that case, I think we have got an aggressive program. We have gotten over $600 million at nearly 400 sites.

Secondly, if we cannot get the responsible parties to pay up front, then we go and expend the fund money and go after them after we have completed that fund. As you can see, that process is just beginning, as far as the amount of money we are recovering. But it is beginning to grow.

The right-hand chart shows you why. Over there on the final right-hand column, you will see $300 million that is actually in the cost-recovery stage now, which means active cases going to court.

That is because of the $460 million that is available for cost recovery at sites where work has actually been completed, we have got $300 million of it in the pipeline. We have recovered about $50 million of it. The others are all active cases that are under way.

You see Sites with Viable Responsible Parties, that line right there. That is the universe of cost-recovery money that we will be going after. It is considerably more than half of the money, about two-thirds of the money, that has been expended. It does not include sites where we do not have any responsible parties or where we only have bankrupt responsible parties. And it does not cover those costs that we cannot distribute to a particular site, like our research and development programs.

So the majority of the money that we have expended will be incorporated into our cost-recovery program. Once that site work is finished, we have a process for collecting the documentation and then moving the case to the Department of Justice. And that process is picking up speed as we complete more and more sites.

Senator STAFFORD. Thank you very much.

Now let me turn to a matter extraneous to this committee, Mr. Chairman, but I think it is important to us. That has to do with chlorofluorocarbons. It just happens that this Senator has made a couple of speeches lately on this particular subject, so I am a little better informed than I usually am on something.

My impression is that you have been the principal architect of the American position as far as CFCs and their reduction or freeze or elimination is concerned in this country and worldwide. I am well aware there is another international conference, which began Monday, on this same subject.

I think the American position, as I understand it, has been a freeze followed by a 95 percent ultimate reduction worldwide. I hope correctly, I give you credit for being the principal architect of that position.

In any event, I am now hearing rumors that, while we have been somewhat persuasive to our industrialized friends across the world, our negotiators have been instructed to seek only a 20 percent reduction in CFCs worldwide at the current meeting.

I think that is a regrettable reduction in a policy, if that is true. I hope it is not, and I hope that you are sticking by your own, if I am correct, original positions, which I want you to know I think are correct and should be the American position.

Mr. THOMAS. Senator, you are absolutely right. The third negotiating session under the United Nations is under way this week. It is a critical session, one that is really getting into the issues that you expressed. Going into that, the United States' delegation's directions were basically the same as they had had in the past.

I will tell you, though, I anticipate that the overall position is going to be different from the U.S. position on reductions. I think everybody does, because it is a negotiating session.

As you indicated, we started off with a number of other countries that did not feel we should go as far as the United States suggested. As a matter of fact, we started off with a number of countries, particularly the heaviest-producing countries of chlorofluorocarbons, who felt that no reduction was required. They have moved. We have begun to bring them closer to our position, as they have tried to bring us closer to theirs. It is negotiating, and you are fully aware of how that process is conducted.

I must tell you that I still feel that a key element of the ultimate outcome should be to incorporate as many of the chlorofluorocarbon chemicals as possible under this agreement, also to ensure that there is a reduction of as much as we are able to get automatically incorporated into this agreement and that goals for further reduction, if we cannot get the full reduction, be incorporated as goals that would be subject to further scientific review, and that we set up that scientific review process as an ongoing, routine, regular part of the international community's process.

I fully anticipated that my 95 percent would not hold until the end. That does not mean I am not going to push it hard. But I am absolutely convinced that we need to get a reduction incorporated into that agreement that will force the beginning of the development of substitutes for these chemicals that will not offend the stratospheric ozone layer, which is the problem we have got with those existing chemicals.

I talked with one of my representatives on the delegation last night in Geneva. He told me he felt the negotiations were going fairly well. He felt that there was additional progress being made as far as movement on the part of other countries towards some of the positions that we felt were very important but there was still a long way to go this week.

So I can give you a better feel for the specifics of those negotiations in a few more days.

Senator STAFFORD. Thank you very much. You encourage me. I do believe that the tougher our position, the easier it will be to get a negotiated agreement, internationally, that will have an effective impact on the problem of CFCs and ozone in the stratosphere.

Mr. THOMAS. That has been my position, too, Senator.

I will say the 20 percent figure you talked about is a figure that the European Community has suggested as a reduction. They started off suggesting no reduction. After a lot of discussion, they have come to 20 percent. The Japanese have not yet come to that position. They have come to a position where I think they feel a freeze is appropriate but without an automatic reduction. That is all a part of the negotiation that is going on this week.

I am hopeful that the 95 percent that we suggested, the freeze level that the Japanese have talked about, the 20 percent that the European Community has talked about, somewhere in between all those figures we are going to come out with a good required automatic reduction that would be associated with chlorofluorocarbons.

Senator **Stafford**. Thank you very much.

Thank you, Mr. Chairman.

Senator **Lautenberg**. Thank you, Senator Stafford. It is always a pleasure to have you with us, and we look forward to your continued active participation.

I want to get back to something that was said before, that you plan to start 123 RI/FS and 99 remedial designs this year. The information from EPA states that as of February 28, 1987 only three RI/FS were started and there were no remedial designs begun. How are you going to meet those?

Mr. **Thomas**. Actually, I am glad you asked that question. It is a good example of what is required to start this program. As you know, we have gone down to zero on both of those figures, and we got reauthorization after the first quarter began. We have gotten our allocation of money now. And to show you what took place the next month, we have already gotten, by the end of February, nearly 50 remedial investigations under way, nearly 30 designs under way, and 16 of the remedial actions under way. So our projections are that we will meet or exceed those targets this year.

Senator **Lautenberg**. What is under way? I am familiar with it in nautical terms.

Mr. **Thomas**. In this program, it is similar to nautical terms. It means the ship is sailing, the captain is at the helm, we have the project running. In other words, we have initiated the project and the contractor is going forward with the work.

Senator **Lautenberg**. So the trans-Atlantic journey, you are saying, is under way if you left the dock down here in Washington, D.C. by one foot.

Mr. **Thomas**. And in these projects, in some cases you are talking about a one-year project; in other cases you are talking about a two-year project. So it depends on the project as to how long the actual work will take.

Senator **Lautenberg**. Some of these delays, I think, that we are experiencing have to do with the obligating of funds. The regions did not get the go-ahead to obligate funds for the first two quarters for fiscal year 1987 until the middle of February. This late release of this money, coupled with the reauthorization slowdown, I think, has just further stymied Superfund. Why was the release of the funds so late in coming?

Mr. **Thomas**. Senator, as you know, Congress did not complete reauthorization of the law and we did not get the law signed until the middle of October. The tax collections were not authorized under the law to begin until January. We had to, in fact, go through a process of getting approval from the Treasury Department to borrow the funds to actually begin the process of initiating the program.

We went through that process. We got approval from Treasury to do that in advance of any tax collections coming in. And actually, I think we moved expeditiously to get that done. We got the essential elements of the program running quickly and we got all of the elements of the program running by February, as you indicated.

Senator **Lautenberg**. The design was not to pace the release of the funds.

Mr. **Thomas**. The only design was to move it as fast as we could.

Senator LAUTENBERG. The regions, however, did not submit their 1987 plans until late December. Why could they not have done that before?

Mr. PORTER. We were certainly working on them before that, Senator. Those numbers started coming in in December, you are right. But remember, there was a lot of work ongoing and we were trying to wrap up the entire program. But that process did start in December.

Senator LAUTENBERG. I do not know whether it is symptomatic of the inability to structure this agency to handle a very complex, a very large program, that Superfund is. But Lee, I would have to tell you that I have seen delays in several situations that dismay and concern me. One was on the radon demonstration project where the report was due on February 1, I think it was. We still do not have it, and now we are nudging May. And there is the I.G.'s report that we referred to earlier.

It is taking an awful long time to get responses back on these things.

Mr. THOMAS. Senator, I understand your concern. I must tell you, though, that I think we are being responsive. It is not as if, for instance on the I.G.'s report, we did not provide a report. Sure, there was a report. There was a full draft report that the I.G. had ahead of that date. We were in the process of reviewing that, had ongoing discussions with the I.G.'s office long before that date occurred. The final report, with full review by the I.G., is the date you are talking about.

Concerning the radon report, as you know, we have had extensive discussions with the Environment and Public Works Committee and hearings on the issue of radon. We are working hard to be responsive to the committee's concerns on radon as well as other concerns. You have had hearings on the whole indoor-air issue and on radon separately.

I think we are trying to be responsive.

Senator LAUTENBERG. I do not know whether you received a full report on that hearing. Some of your colleagues were obviously there at the moment that we asked about the radon demonstration report. And frankly, it looks like, and by their own admission, they did not submit it.

We hear on this Texas Eastern thing, there was an admission that EPA was asleep at the switch. That is almost the exact terminology that was used, Lee. The same thing came through when we talked about the radon demonstration report. Why not? And when is it going to be ready? Frankly, everybody was somewhat embarrassed, looking at one another, saying when will we submit it? Mr. Barnes was there. We still do not have that. Is the agency being overtaxed?

Mr. THOMAS. Senator, let me say two things. One is that EPA has a tremendous workload. It has increased dramatically in the last three years as Congress has given us large new authorities under a number of new pieces of legislation like the one we are discussing today, Superfund. So there is no question about that.

EPA, I think, does a very good job of responding to that workload. However, EPA is not a perfect agency. There are going to be occasions where deadlines are missed. If you take a look at, for instance, the Superfund law, we had numerous deadlines incorporated. As a matter of fact, we have already hit about 20 of them in the law, and I must tell you that we have met nearly every one of them that you gave us to get regulations for guidance out. We have missed a couple; the radon one is an example.

But you must admit that we are working hard in the field on a radon program to try to get information to the public, to try to work with the public, to deal with the problem.

We will work harder to meet your deadlines, but there are going to be occasions when we miss them.

Senator LAUTENBERG. There is no intent to suggest there was less than full effort. I think, Lee, it does go back to an earlier point where you and I discussed the wrapping up phase. It took a long time for the White House to issue the executive order. We have seen funding requests at less than the authorized levels.

I just would not like to see us constantly reviewing missed deadlines, because, again, whether it is a missed deadline on Project A, B, or C, these are symptoms at times of other problems. And there is no one that would suggest that you or your agency has an easy job. It is very complicated, and we are always treading new waters, I think, with these conditions we put into SARA, the wrapping-up experience of this gigantic proposal.

But frankly, when we look at that coupled with the insufficient cost accounting targets from the contractors, some questions about recovery, which we will try to deal with in the few minutes we have left, suggest to me that this ship is not fully staffed yet, that though we have a good captain and we have some very good first mates here, if we are going to stay nautical, that there are large parts of the crew that are either untrained or the process is not yet fully developed.

Mr. THOMAS. Senator, there is no question that we are putting on a large number of additional staff, many of them in our regional offices where the management requirements for site work is. As a matter of fact, if you look at this year and next year funding request, we will nearly double the size of the Superfund staff and we will have nearly 3000 federal employees managing the Superfund program. So there is no question that we are staffing up. As I indicated, a number of them are in contract management and contract oversight.

But the program is a far larger program than we ran the first five years. We have also learned a lot during that five-year period of time about how to manage it better.

So yes, it is going to require additional people. There is no question about that.

Senator LAUTENBERG. One thing that concerns me is whether we are going to become a training ground for staffing for the private sector. I would urge you to think about that.

Mr. THOMAS. We have, Senator.

Senator LAUTENBERG. Maybe there ought to be a prohibition. We have seen it in various parts of government. Certainly, the military now has a very detailed process by which those who deal with a contractor, I think, are at least prohibited from going to work for that contractor in a given period of time. We have it in New Jersey in another area, in the gaming business, which is a big part of the

State's tourist business now. You are just not allowed to go to work with someone you have had dealings with.

It is an inhibitor for a career choice. I know that. It is difficult, but we are creating an industry. The industry is created not by EPA but by the pollution problem.

Mr. THOMAS. Senator, you are right. That is an issue, and we have spent a good bit of time on that issue. It is not unlike the same issue we face in our construction grants program, providing funding for building sewage treatment facilities. We have managed that program, a $2.5 billion to $4 billion a year program, for a number of years.

We not only have to look at ensuring that we have good, well-qualified people but that we retain them, so we spend a good bit of time looking at how we do that. Some of them are going to go work for the private side as well. Frankly, we want their people to be well qualified also. And if some of them are people who have worked with us, then they will be well qualified.

We do not want to see us as a training ground for them, and we do not think that is what is happening. We have to work on that constantly to retain our people, but we are going to have some of them who go to work for the other side, the contractors. There is no question about that. But we can benefit from that.

Senator LAUTENBERG. I urge you to give that some thought, and I would like a response from you, because we do not want to be, on the mandate that we have for Superfund/EPA, simply a department of education facility. That is not our mission.

The other thing that worries me a lot, I must tell you, is what happens when someone goes from EPA to the private sector and helps them design contracts and opportunities to do business. This is, after all, a huge piece of business that is out there. When you start talking about billions of dollars over a period of 5 years, it is a very inviting place for a new career. It is different than sewage treatment facilities because there is lots of that going around now.

We are going to discover—it is my prediction, and I am sure you will agree—that as we go ahead with this cleanup process, we are going to discover a whole new series of things. We will discover new technologies. We will discover new techniques, new processes by which we do this. So it is an uncharted field.

There lies, in my view, a lot of economic opportunity as well as a lot of opportunity for funny business, if we are not careful. I would not like to see someone who is inside the agency doing their own assessment and saying okay, if I go to work for you, Mr. Contractor, I know where the soft spots are and I know how to pick off the good parts of this thing. Obviously, there is some special knowledge. So that is something to think about.

Mr. THOMAS. Senator, the points you are making are absolutely correct as far as the kind of vigilance we have to have on both our own operations and on contract operations. I know when you question our Inspector General, you will find that we have asked him to pay special attention, with increased personnel, to this program so, in fact, the potential for fraud, waste, abuse is not realized under this program.

Senator LAUTENBERG. Lee, I know you are in a hurry to go. I just want to cover a couple of things with you.

Audits show that some States do not have adequate documentation by which they are accounting for or justifying costs incurred at Superfund sites. This ties in to a separate issue, and that is the cost recovery issue. I am concerned about that, because without adequate documentation, EPA's ability to recover costs from responsible parties is certainly stymied. Not only will the fund not be replenished, but exactly what we did not intend to happen is going to happen. That is that we will be paying for the unlawful, health threatening actions of responsible parties.

You have established a national program to develop a consistency by States in the documentation of these costs, have you not? If you have not, are you?

Mr. THOMAS. We have. I would say in the cost recovery program, one of the areas that we need to continue to work to improve is that portion of the costs that the state managed. It covers the issue that we talked about on state cooperative agreements as well as the recovery issue.

What we have to ensure is that that state has the same kind of record-keeping capability for maintaining site-specific costs that we have so we can combine those two records when we go to recover costs at a site. We are working to strengthen that.

Senator LAUTENBERG. Lee, the I.G.'s report on EPA/Superfund recovery program is critical of the agency's efforts. I heard what you said there, and we looked very carefully at all the charts. But according to the I.G., 5 years into the program, we have only had $14 million recovered. We know there have been settlements, to a fairly large extent, but that is not cost recovery.

$14 million out of funds that have been obligated to the tune of $1.3 billion is a fairly dismal record, particularly if that is an accurate measure of what we can expect over the next five years. Now, you do extend your projections to 1988 and talk about $50 million that might be recovered.

Mr. THOMAS. Through first quarter of this year, Senator, we have recovered about $50 million. The figure you are using was from fiscal year 1985.

Senator LAUTENBERG. You say through the first quarter. I am trying to eye-ball that chart there. Through the first quarter still leaves us with about 2 percent of the roughly $1.8 billion, because the $1.3 billion did end a year and a half ago. That is not a lot.

Mr. THOMAS. I think the answer to that, as I have stated, Senator, is no, that is about 3 percent of the $1.8 billion. However, of the sites that have been finished and of the sites where we are going forward with cost-recovery action, we have got about 65 percent of the money that we have either recovered or we have in the court process. We will have the rest of it in the process this year. We are moving forward.

As we finish work at a site, the data is pulled together, the case is prepared and we go to court. Many of these sites, however, take years to complete. So you, in fact, will see that cost-recovery curve at the bottom will go up.

Senator LAUTENBERG. If we look at the color chart there, we have the column that says Sites with Viable PRPs. What is that sum?

Mr. THOMAS. The sum? I do not have the figure. It is about $1.4 billion.

Senator LAUTENBERG. Out of that, you are saying that we have initiated $300 million worth of action.

Mr. THOMAS. Right.

Senator LAUTENBERG. We have received $50 million. Something has to happen to speed up the process.

Mr. THOMAS. The thing that speeds up the process is you finish the site work. You can't start the cost-recovery action until you finish the site work. So the $1.4 billion with viable PRPs, about $460 million of it is where we have finished site work and we are moving the cost-recovery actions on that.

You have got about $1 billion where the site work is not actually fully completed, so we have not started a site-recovery action.

Senator LAUTENBERG. The Inspector General reported that once you are at a point where you are negotiating cost recovery, it has been taking 9 months to negotiate the settlement.

Mr. THOMAS. Senator, I do not think that is unusual when you think about the judicial process and moving a site through the judicial process to actually reach settlement.

Senator LAUTENBERG. We are talking now about the negotiation part of the settlement. We are saying that here is a party that is essentially identified with the responsibility. Does that not sound like a long time?

Mr. PORTER. Can I comment, too, Senator? I think one of the things that is happening on some of these older cases is we did not have as good documentation as we have now, and there was more contention perhaps in some of those earlier cases.

But certainly when you finish a case like there, there is going to be some dialogue on what is recoverable and what is not.

Senator LAUTENBERG. What is your goal for negotiating these settlements?

Mr. PORTER. We do not have a specific goal. I think, as Lee said, nine months does not seem terribly long, but it can be better.

Senator LAUTENBERG. The I.G. reported a 60-day objective.

Mr. PORTER. Yes, that is the objective we use.

Mr. THOMAS. Those are the kind of time frames we are putting in place. But let me tell you, Senator, what you are dealing with here, as far as an enforcement action is concerned, is your toughest cases. The cases where you are going to get your money up front you have got in that top line up there. These are the responsible parties who would not settle with you, the responsible parties who have said all along: no, it is not my site; I am not going to pay for it; you do not have the documentation to make me pay for it.

So you have come to the end of the line now with these people that you are getting your money back from. In fact, the settlement process time delay is because of that and also because of the fact that you are dealing with EPA, Department of Justice and the judicial system in trying to work through a settlement negotiation.

Senator LAUTENBERG. Thank you very much, Lee and your colleagues, for being with us. There is a forthrightness about you which I respect. I would have to tell you that we, at times, disagree on some of the results as well as some of the goals and objectives.

I think my concerns are more objective than you would agree to, based on the fact that we see these incidents of slippage, whether it is based on the differences expressed by the I.G. or simply, what I will have to tell you as a former corporate executive of a fairly complicated and big company, that the procedures to me seem less than adequate.

I know that you strive for continuous improvement there. That goes for all three of you and the people whom I have met from EPA.

To this point, I do not think that the systems are adequate for the task. You do not need my urging you to get on with that. I know how hard everybody does work there. But we are at a point in time when the job can be done more effectively. I hope that we will see the results of your efforts now, because there is an awful lot of money out there. It is very inviting. It is a targeted opportunity for lots of people. We have a responsibility to the citizens of our country to do a good job.

Mr. THOMAS. Senator, I could not agree with you more that we have that responsibility.

I would like to say that we appreciate working with you. The kind of questions you are asking, the kind of oversight you intend to have with this subcommittee on the program, I think, is excellent, very strong, and we look forward to working with you to ensure that, in fact, we all can say we have a very strong program.

Senator LAUTENBERG. We will give you that opportunity.

Thank you very much.

Our next witness is Mr. John Martin. He is the Inspector General of the Environmental Protection Agency. We are pleased to have you with us, Mr. Martin. You have had that assignment since 1983, and you came to the agency, like Lee Thomas, to help bail it out when it was a leaky ship.

Prior to your service at EPA, you served as the Assistant Inspector General for the Department of Housing and Urban Development. You have been with the FBI and have served in some local government positions.

You certainly, Mr. Martin, have experience for the job, and your Superfund audits are an example of that experience. You pull no punches, and you made what I think are wise recommendations. The agency is implementing many of them. We are anxious to hear from you, and we complement you on your diligence. That is a responsibility.

I think it must have been pleasant for you to hear that the Administrator agreed with the zeal and with the thoroughness of the job that you are doing. It is good to hear that. I would have expected nothing less from Mr. Thomas.

But we urge you to continue with that diligence. You have a responsibility for a very important area of responsibility for the environment in this country as well as for the citizens. So we are pleased to have you with us.

I would ask all three of you to stand and take the oath. Do you swear that the testimony that you give to this subcommittee is the truth, the whole truth and nothing but the truth, so help you, God?

Panel, en masse. I do.

Senator LAUTENBERG. Mr. Martin, if you would go on with your testimony, we look forward to hearing it.

STATEMENT OF JOHN C. MARTIN, INSPECTOR GENERAL, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY DONALD E. KIRKENDALL, DEPUTY INSPECTOR GENERAL; AND ERNEST E. BRADLEY III, ASSISTANT INSPECTOR GENERAL FOR AUDITS

Mr. MARTIN. Thank you, Senator. Let me first introduce the two people at the table with me. On my left is my Deputy Inspector General, Donald Kirkendall, who is my principal assistant in dealing with all the matters in the Inspector General's office. On my right is Ernest Bradley, who is my Assistant Inspector General for Audits. He is responsible for all the audit operations of the I.G.'s office around the country.

If I could just highlight my remarks and ask that my full statement be included in the record.

There are four main areas that I would like to briefly go over. The first is our work in the Emergency Response Cleanup Service Contracts, ERCS; second, cooperative agreements; third, the work we have done concerning on-scene coordinators in EPA; and finally, cost-recovery issues.

We issued an audit report last September on EPA's emergency response services, the contracts for which were awarded in 1983 and 1984. We found that the ERCS contracts with a potential value of $185 million allowed the contractors excessive markups over costs.

We use the term "markup" to mean the difference between estimated actual costs and the rates billed to EPA.

For labor costs, we found markups averaged 40 percent. When overtime rates were billed, markups in some cases were even a lot higher. For example, at one site, EPA paid over $20,000 for security guards which cost the contractor a little more than $8,000, a markup of 146 percent.

As shown on the first chart, we found markups on equipment items ranged from an average of 143 percent on monthly rates to an average of 321 percent on hourly rates. For example, a simple trash pump was billed to EPA at a rate of $16 an hour, or $945 a month. The contractor originally bought the pump for a little more than $500 and depreciated it for five years. No repair or maintenance costs were recorded for it. The contractor received $4,000 at just one site for the use of this $500 pump. Since the pump had an estimated life of five years, the contractor may well have received substantial additional payments for the pump at other sites.

In another instance, EPA was charged $58 a day for the use of a pickup truck that the subcontractor just leased for $16 a day. This was a net markup to him of $262 percent over actual cost.

A number of problems contributed to these excess markups. The massive size and stringent response requirements of the ERCS contracts severely limited the number of companies which submitted proposals. The limited number of offerors and their contractual interrelationships and the use of price analysis instead of cost analysis made it difficult for the agency to obtain reasonable rates.

The use of fixed rates for most labor and equipment categories, including subcontracted items, allowed contractors to recover many times the actual costs for some items. Fixed rate contracts are not cost effective unless the fixed rates are reasonable and reflective of the circumstances involved.

The factors which limited the ERCS procurement, restrictions in the RFP and difficult contract specifications undoubtedly affected the contract price structure and the way contractors did their business under the contracts.

In response to our audit report, the agency has adopted a new contract strategy for the removal program to be implemented over three years. This strategy involves going from four large zones to as many as 25 by the end of 1988 plus a number of competitive procurements for cleanup of individual sites. These contracts will be tailored to different degrees of urgency.

The agency has shifted to rely more on a cost-reimbursement payment term and limit the use of fixed rates. It is also relying more on cost analysis rather than price analysis to obtain reasonable rates.

In order to provide day-to-day oversight and management of the contracts, the agency is placing contract specialists in EPA's regional offices. The agency has laid out a comprehensive plan that represents a total rethinking of the procurement process for cleanup contracts.

If the agency implements all of the initiatives contained in its strategy, we believe that the process for procurement of immediate response contracts will be greatly approved. We are going to continue to monitor the agency's implementation of this strategy and evaluate its effectiveness.

Now, the next is cooperative agreements. We have conducted two major types of audits of state-led cleanups under cooperative agreements awarded by EPA. We have reviewed both the EPA regional oversight of the States and have audited the States themselves which have claimed costs under the agreements.

The first type of audit looked at EPA regional management of cooperative agreements with the States. While specific problems varied, we consistently found that the agency had not adequately monitored the States receiving Superfund cooperative agreements to ensure that federal requirements were met and that objectives of the agreement were achieved in a timely manner.

For example, we found that EPA project officers lacked adequate training in the area of procurement and contract administration and did not require the states to take necessary action for deficiencies that they had identfied. We found that EPA project officers did not take effective action to ensure timely completion of remedial investigations and feasibility studies which were taking more than two years to complete. The regions were also not receiving required state progress reports and not following up on reports when they did not get them.

As an example of what one State was doing, they were charging costs which were not supported by any documentation. For instance, six employees were charging more than 100 percent of the total time they worked to only three EPA cooperative agreements. Several of these same employees who were charging over 100 percent of their time to EPA were also responsible for other state programs during the same time period.

The regions we reviewed responded to our reports with planned corrective actions. Again, as with ERCS, we are going to make sure that these deficiencies are corrected.

In addition to reviewing EPA's regional oversight of state cleanups, we have performed external audits of specific Superfund cooperative agreements. In fiscal year 1986, we issued nine such reports and we issued six in the first half of fiscal year 1987.

As the second chart shows, we audited $22 million of costs claimed under 15 cooperative agreements. We questioned $1.2 million as being unallowable for federal reimbursement and set aside another $6.4 million for further agency review. This illustrates the fact that we had problems with almost a third of the costs that we reviewed.

Some of the deficient areas we have identified related to poor documentation of labor, travel and laboratory costs, and the states' accounting systems were often not adequate to record costs by specific sites. However, the biggest single problem we encountered was the state procurement system.

Most States just did not have a written procurement manual which addressed EPA's requirements. And a number of states did not always conduct or document required cost analysis to determine that the costs they paid were reasonable. Some states did not adequately document the justification for the selection of the procurement method they used or to evaluate offerors based on clear criteria which were outlined in the requests for proposal. Some states entered into contracts with prohibited cost-plus-percentage-of-cost clauses. Federal regulations prohibit these kinds of contracts which add on a fixed percent to direct costs and, thus, encourage contractors to maximize rather than minimize their costs.

EPA has recognized state procurement deficiencies as a national problem. It has issued a manual and offered training to state personnel to address the problem. In response to our audit reports on these issues, a number of states have prepared procurement manuals and are generally working to improve their operations. Again, we are going to follow up to make sure the problems we have identified have been corrected.

Concerning removal actions, during the past three years, we conducted unannounced on-site audits of removal actions. These audits determined the adequacy of the controls exercised by EPA's on-scene coordinators. To date, we have issued 14 final reports on such audits covering 18 different sites.

We have generally found that EPA's on-scene coordinators have not exercised adequate controls to ensure that EPA pays only for the services it receives. Documentation has generally been incomplete and inadequate and, in a number of instances, internally inconsistent.

At several sites we found clearly unallowable charges were billed to EPA and approved by the on-scene coordinator. For example, at one site we found that a contractor billed twelve people for two days' work when no work was performed at the site. Protective clothing was charged for 15 days during which employees did not work. And equipment was charged when it was not being used.

Partly as a result of our audit reports on removal actions, as well as the ERCS report, the agency established a work group on management support for Superfund's on-scene coordinators. A final work group report was issued on March 27 of this year. It made a number of recommendations to improve administrative support for on-scene coordinators and to institute a formal internal control review program.

The recommendations included the establishment of administrative support units, four on-scene coordinators and other training and administrative areas. We intend to continue to perform unannounced on-site audits and will be able to evaluate the effectiveness of the agency's initiatives in this regard.

The final chart that we have illustrates what we have done in the area of cost recovery. In September of 1986, we issued a report on EPA's efforts to have Potential Responsible Parties clean up hazardous waste sites or pay for the cleanup done by the federal government.

As this chart shows, overall we found that as of September 30, 1985, EPA had obligated $1.3 million for the trust fund. The agency had negotiated 84 cost-recovery cases totaling $26 million. This resulted in 72 cases being settled for $14.6 million of which $14 million had been collected as of that time.

Now, there has been much discussion between us and the agency over the appropriate ways of presenting data on the agency's enforcement program. We recognize that there are different methods of presenting such data. Just last week, in response to the cost-recovery audit report, the agency presented several other ways to evaluate its collection activities.

One method included identifying the universe of sites potentially ready for cost recovery and then examining the cost-recovery activity initiated against those sites. Another method compared the amounts sought by the agency versus the amounts settled with the responsible parties. These alternative methodologies for measuring the success of the program and the dollar values and percentages presented raise a number of questions.

We are still in the process of evaluating the agency's response, but it appears that the agency is viewing cost recovery activities from a different perspective. In our analysis, we wanted to show the simple overall impact on the trust fund. That is, of $1.3 billion obligated, the agency had actual collections of only $14 million, or a cost-recovery ratio of 1.1 percent.

Unless the trust fund is replenished by cost recoveries, the agency's ability to clean up hazardous waste sites will be diminished.

We found that EPA also was not aggressively pursuing cost-recovery action against potential responsible parties where funds expended for removal activities were under $200,000. As of September 30, 1985, we found 182 removal actions under $200,000, which totaled $6 million, where cost-recover actions were not being pursued. We also calculated that potentially over $60 million could be lost to the trust fund in the next 20 years if a concerted effort to recover costs for removal actions under $200,000 is not made.

In summary, as we have talked about here today, our audit work has shown that EPA has some real problems in administering the Superfund program. At the same time, however, the agency has worked cooperatively with us in developing aggressive plans of action for alleviating the identified problems. While there may occasionaly be some disagreement between us and the agency about the details of any individual audit report, there is maximum cooperation in getting problems corrected.

The EPA staff, from the Administrator on down, understands and support our role in reviewing program operations and have demonstrated their willingness to work cooperatively with us to obtain needed operational improvements. You can be sure that we are going to continue to work closely with the agency to make the Superfund program function as effectively, economically and efficiently as possible.

My staff and I will be happy to answer any questions that you may have concerning these issues.

Senator LAUTENBERG. Thank you very much, Mr. Martin.

In your testimony and my statement, we both referred to the obvious incidents of major problems with overcharges. We talked about the two-inch trash pump. You also heard the Administrator say that we can find isolated examples of abuse but that, in general, there was a better handle on things than appear to be. Certainly, you do not confirm that view in your comments.

One way of examining the total is to look at its parts, like we have these single incidents, and see whether they do run consistently through the process. Is it fair to say that your audit was thorough enough, your review was thorough enough, that you did not find these matters so infrequently as to confirm Mr. Thomas's judgment that these were just isolated incidents?

You challenge the whole process, the cost analysis, the pricing, et cetera. Is it fair to say that these incidents are just repetitive of a general condition? Or would you not go that far?

Mr. MARTIN. The audit office undertook a major effort in order to study the contractors and the individual delivery orders that we did audit. In many cases, they had to go in and reconstruct an entire company's records in order to come up with the figures that they have been able to produce for the audit report that we issued.

Because of the tremendous amount of work that that involved, we were not able to do numerous specific delivery orders. However, we chose delivery orders that we believed at the end of our work would adequately represent the total universe of the work that EPA did.

Now, we did not approach this from a statistical point of view, so we are not talking about a situation where we can talk about statistical validity or anything like that. But we are confident that the work that we did adequately represents the real situation that EPA faced in its administration of ERCS contracts.

Senator LAUTENBERG. It would seem to me that if the basic record-keeping is not there at the contractor level, if it is not there at the State level, which is also an observation that you make in your report, that finding problems, finding overcharges, finding abuses would not be a particularly difficult assignment.

If the process is not in place, if the records are not kept, then it is pretty obvious to me, as a former businessman and I assume to those responsible for audit and review, that you are going to have lots of this stuff occur. It is not to suggest that contractors are stealing or that there are attempts to defraud. But certainly even perhaps without knowledge, a contractor is going to be able to make these charges and abuse at least good judgement, if not violate the law.

We have seen enough of this to suggest that we need more management from EPA to ensure that these funds are being appropriately expended. Do you agree with that?

Mr. MARTIN. Senator, that really is the entire thrust of our report, particularly as it deals with the ERCS contracts. And as I said in my testimony, the agency has moved miles ahead in an effort to do exactly what you are suggesting: that is, really get a handle on what it costs contractors to do the kind of work we are asking them to do and to make the contracts more reasonable.

Even though, as Mr. Porter and the Administrator spoke about earlier, for example, when you talk about one of the zones that we talked about in the ERCS contracts, a zone that extends all the way from Louisiana to Alaska, even though there are subcontractors within that zone, it became, I think, extremely difficult for any contractor to agree to take on a zone of that size. I think it would be a substantial undertaking for anyone.

So a major point of our audit report was that EPA hemmed itself in by the way it structured its own contracts. Then it coupled that with the fact that it just simply never had adequate information from the contractors or from experience to determine what realistic rates should be.

So in the end, when you had so few bidders—there were only in the end seven bidders for the four zones—ERA had very little choice to pick from. And in this situation, they found themselves, I think, agreeing to rates that simply allowed the contractors, as I said in my testimony, extensively high markups.

Senator LAUTENBERG. I must tell you that I am always suspicious of companies that do not keep records, particularly when so much of their income depends on personnel, as contrasted to manufacturing and contrasted to other kinds of service business. When there is a lot of personnel involvement, equipment involvement—those are very measurable things—it raises concerns for me, because it is known in the past that that often obscures income, profits, taxes, et cetera.

For companies not to have basic records about where their costs are, that they are able to produce, certainly is a violation of good management, again, if not something even more suspect than that.

EPA has come a long way, as you said, but the fact is that there was a lot of money that was spent in the last 7 years, since 1980. And to hear about inadequate systems or inadequate supervision concerns me. At what point is the job so complicated that it is unmanageable? And are we, as some suggest, just throwing money at this thing?

I do not believe that that is necessary. Again, we see EPA talking about its improvements, about improvements in systems, cost analysis and so forth. We like to see that. It does suggest to me that there was a period of time before when not enough attention was given to these things. By admission of the fact that they are improving, it says that they were not good enough. Then when we couple that with the incidents of overcharges, then we have got ourselves a problem.

How about the lack of ability to recover from polluters? Do we not have to provide perhaps the courts, or at least some kind of an arbitrator, documentation that says this is what it cost to clean up this mess? I would think that is called for. If we cannot supply the supporting documentation for which we paid and which we seek to recover, then how can we justify the request for reimbursement?

Mr. MARTIN. Senator, we are often called on to verify, in fact, the costs of a particular cleanup. We do, sometimes by request even of the Justice Department, particular audits of certain sites to verify what the costs actually were in cleaning up a site.

And you are absolutely right, that in the absence of completely verifiable records, you can bet that responsible parties or a defendant in a suit is definitely going to object to paying anything that we cannot document or the state, if they did the work, cannot document as being costs that are either directly or indirectly attributable to a site. So your point is exactly correct.

Senator LAUTENBERG. You are talking in your testimony about fixed rates. That is also a terminology that gets mixed. I think of a fixed contract as something that has a ceiling on top of it, and underneath, the costs for a specific function become less of a concern. But when you use the term fixed rates, you are talking about the fixed rate for labor, fixed rate for equipment, fixed rate for materials, without a ceiling on those expenditures.

What would be tne incentive for a contractor to get the work done in a hurry or to save money, if it is essentially a time-and-materials contract?

Mr. MARTIN. I think you have hit an obvious nail on the head, Senator. As Mr. Messner spoke earlier, except for their general reputation and their desire perhaps to do good work, other than that, they have very little incentive, because they are going to get paid for whatever they bill us as long as the work was actually performed and we cannot prove that they are fraudulently billing us. But as long as the people were on the site, equipment was on the site, the pace that you work at to get a job done can certainly vary.

Senator LAUTENBERG. We also then cannot really tell about the reasonableness of those rates, even though those rates are used for billing, if we do not have adequate cost analysis records within the contractor's company.

Mr. MARTIN. That is correct.

Senator LAUTENBERG. I want to talk about the cost recovery percentages. You heard the dispute—you were in the audience—about how much progress had been made. We talked about $14 million up to 1985, September 30. We talked about the percentage or the opportunity the agency felt was available.

It is still a pretty small target, is it not, or a small result compared to the funds expended so far? We looked at $50 million to this point out of a total of some $400 million opportunity and out of $1.8 expended, some 2.5 percent, some number like that.

What do you think would have to be done to improve that ratio?

Mr. MARTIN. Senator, the agency, as late as about a week ago, was really unable to provide to us many of the statistics which we are hearing today. They have done a great deal of work to be able to pull together meaningful statistics to illustrate their success in the cost-recovery effort. We have not had an opportunity to review those statistics ourselves, so I would have a hard time commenting specifically on the numbers that have been provided, because we really have not had a chance to study them.

As far as the basic theory is concerned, I think my concern is, as we expressed in our report, much the same as you have expressed. And even GAO did a similar report on cost recover not too long ago where they looked at just direct costs expended at certain sites, and then they analyzed the recovery of that. So we did not get into overhead costs or whatever. And they found a recovery rate of about 4 percent.

So it seems like all of us seem to be zeroing in. When we look at what is actually being recovered into the fund in a cost-recovery action, we are coming out with some very low percentages. That was the simple point of our comment.

As I said in my testimony, it is absolutely true that there are many different ways to analyze statistics, and many of the ideas that the agency has are certainly valid: examining sites that there was no expectation that you could recover any money from; talking about certain types of overhead written in the agency's program, like in research and development where there was just simply no way to identify particular sites. That is understandable that we are never going to recover all of that money.

But when we talk about percentages as low as 1 percent, 2 percent, 4 percent, that was really the thrust of our report, that we just thought is really important that we put a great deal of emphasis on adequately replenishing the fund.

A simple example of what to do is where we pointed out that the agency really is not doing anything with sites that have costs under $200,000. That may not be a large amount of money in comparison with the federal budget, but those amounts are adding up fairly quickly. Over time, we see a tremendous loss of money to the fund.

Senator LAUTENBERG. Mr. Messner, you are sitting there and hearing this, and you are still under the obligation of the oath. Would you want to respond to a question about the lateness of information regarding these recoveries so the I.G. would have had an opportunity to work with them at a little bit earlier date?

Mr. MESSNER. I will try, Mr. Chairman. It is not often I get a chance to replace the chief auditor of the agency at the table, so I will take the opportunity. Thank you.

It is really a matter of presentation. Some of our colleagues have been before the committee of the Congress in the last several months presenting the data. As the questions have been posed, the explanations of the data have been refined.

I think taking a stark left-hand column that says you had $1.5 billion and then a stark right-hand column showing you only collected an infinitesimal portion of that does not fully represent the dilemma of management in the agency. What Lee Thomas tried to do was to take those two columns and to begin to really hone in and refine our explanation of what we are after.

I think the American people are getting a good deal. I think they are going to get a better deal as the momentum of this program develops. I think, as the I.G. said, as he continuously monitors this program, you are going to see the curve on that chart go up. It will never go up to the maximum of the total of the program because of the reasons stated.

Our attention is riveted on this issue both by your interest, by the interest of the Inspector General and by the other checks and balances in the system.

Senator LAUTENBERG. Thanks, Mr. Messner. I would say this, that the hot breath of the I.G. apparently does produce some results that standard management practices have not produced.

Mr. MESSNER. I find working with the Inspector General in this agency both stimulating and positive.

Senator LAUTENBERG. And energizing?

Mr. MESSNER. Yes, sir.

Mr. MARTIN. Mr. Chairman, I doubt that I could let that pass without a comment. There is just no question that Mr. Messner, once he has seized on the issues that we have raised in our various reports, has just been a tremendous driving force in working in his operation, because he is responsible for that area of contracting, to work on improvements. There is just no doubt about that.

Senator LAUTENBERG. We are inclined to give credit where due. But I also do say that the horses should not have to have been whipped so hard to pull the load if they were doing their work before as diligently as we would like to see. That is not to say that it is an easy assignment by a long shot.

You talked about the $200,000 and under. I think you said there were $6 million and the possibility there right now that it could go substantially higher. The agency counters that in many cases it would expend more in effort than it might recover. How do you respond to that?

Mr. MARTIN. For example, the agency pointed out to us that of the 182 sites that we looked at in our work, about 39 percent of those, some 72 sites, had only had amounts expended of under $10,000. However, this only represented in dollars about 5 percent of the total expended on all the sites we looked at. So in other words, 39 percent of the sites represented only 5 percent of the dollars.

A lot of the sites have a substantial amount of money in the $200,000 range. And there is, in our view, no way that the agency can ignore them. Now, perhaps it is not practical to go a full legal route in terms of Justice Department and court suits. But it also appears that there may be options that the agency could consider through a less involved debt collection type of process.

It is very important, in our view, that they not be written off, just automatically written off, as noncollectible because individually the amount of money may not be that large.

Senator LAUTENBERG. I wonder if it is possible to privatize that collection process.

Mr. MARTIN. I am not sure of the legal ramifications of it, but it is an interesting idea. There have been various efforts in the government, I think, to attempt debt collection of different kinds.

Senator LAUTENBERG. You say that there is potentially as much as $60 million worth of recovery in the next 20 years if there is a concerted effort to recover the amounts for sites that have a less than $200,000 tag on them. You also use the analogy of these recoveries to the national debt: that is nothing compared to the national debt. That is significant, I can tell you. But that does not mean that we should not work just as diligently to collect, if we can, those amounts under $200,000.

Very often it is easier, I think, to collect or at least to identify the polluters in those cases, because that is not usually a multi-organizational creation. It is often the result of one company's activity or one individual's activity.

In your testimony you have stated that alternative methods and dollar values and percentages presented by the agency related to cost recovery raised a number of questions. Might you elaborate on that for just a moment, please?

Mr. MARTIN. They are questions in the sense that I already spoke about, Senator, that we simply have not had time, because of when the data was presented to us, to really examine the basis by which the agency has made the calculations.

Senator LAUTENBERG. We would ask you to examine that and try to respond to us, at least in general form, if you can.

Mr. MARTIN. Fine. We will certainly do that, Senator.

[The information requested follows:]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 9 1987

THE INSPECTOR GENERAL

Honorable Frank R. Lautenberg
Chairman, Subcommittee on Superfund
and Environmental Oversight
Committee on Environment and Public Works
Washington, D.C. 20510

Dear Mr. Chairman:

During the Superfund implementation hearings of April 29, you requested that we evaluate the information the Agency presented concerning cost recovery actions.

As we noted in our audit report on Cost Recovery Actions Against Potential Responsible Parties, EPA does not have a comprehensive management information system that consolidates all Superfund enforcement information. Accordingly, on a one time only basis, the Agency compiled its cost recovery data from a number of different Agency management information systems and records. Agency personnel explained their rationale for compiling the data to us and showed us supporting data from various systems. We reviewed computer reports, summary regional memos, Superfund program data, and conducted interviews with Agency staff who compiled the enforcement figures. Also, we tested the data at EPA Headquarters and found the data generally supported the information presented in the hearing.

Based on our Headquarters review, we believe that the Agency's methodology in compiling and presenting its Superfund cost recovery accomplishments appears reasonable. Enforcement costs and indirect costs were based on estimated amounts which could not be validated by the Agency's accounting system. Accordingly, we could express no opinion on these amounts. Furthermore, we cannot express an overall unqualified opinion on any of these figures because the detailed documentation supporting the information contained in Agency management information systems is scattered in hundreds of case and project files located in EPA's regional offices across the nation.

The following briefly discusses our review of the categories of Superfund enforcement data the Agency presented at the April 29 hearings.

Total Superfund Obligations ($1.8 billion)

The Administrator stated during the hearing that EPA had incurred Trust Fund obligations totaling $1.8 billion. We were able to reconcile the $1.8 billion figure to the Agency's accounting system.

Sites Ready for Recovery ($460 million)

Forty-one remedial sites and 546 removal sites, totaling $460 million, were in the category the Agency deems "potentially ripe for recovery". The Agency defines "potentially ripe for recovery" as: (1) funded sites where a remedial action (construction) has started minus the sites where no potential responsibile parties (PRP's) had been identified; and (2) completed removal sites minus the sites where no PRP's had been identified.

The $460 million consists of $384.4 million in site obligations and $75.6 million in indirect and enforcement costs. The obligation dollars were obtained by using data from the Agency's accounting system that had been updated by EPA's regional offices. The methodology used in developing the obligations and the number of sites appears to be reasonable. The methodology used to develop the indirect and enforcement costs is discussed below.

Indirect Costs

The Agency indicated that it used a 15 percent rate applied to site obligations to recover indirect costs. This indirect cost figure was an estimate based on reviewing approximately 15 projects. The Agency does not record indirect costs by site in its accounting system. We were informed by Agency personnel that the dollar figures they used to calculate the 15 percent were provided by the regional offices. Basically, the region identified EPA's direct labor hours for each of the selected projects and multiplied that by the regional indirect cost rate. The region also identified total site obligations. Headquarters personnel then calculated the indirect cost rate based on the data provided by the regions. The average rate for the 15 projects the Agency tested was 9 percent. However, two of the sites were remedial actions where the rates were calculated at 12 and 15 percent. The Agency believed these rates were more representative and thus used 15 percent.

On a judgemental basis, we selected 10 completed removal sites and calculated the indirect cost rate. We used the same methodology as the Agency. We calculated an average rate of 18 percent. Without a detailed computation of indirect costs on all or a valid statistical sample of sites, any figure used is only an estimate which cannot be validated.

Enforcement Costs

The Agency estimated enforcement costs relating to cost recovery actions. Initially, from a review of EPA budget documents Agency personnel determined that approximately 15 percent of the Agency's Superfund enforcement costs were related to cost recovery actions. Accordingly, they simply estimated the enforcement costs related to cost recovery actions by taking 15 percent of total Superfund enforcement costs obligated (i.e., $124 million plus 15 percent indirect costs). We could not verify the accuracy of this estimate, however, because EPA's accounting system did not specifically identify the enforcement costs incurred for cost recovery actions.

Cost Recovery Initiated or Settled ($300 million)

The Agency identified remedial sites and 158 removal actions, totaling $300 million, where cost recovery activity was initiated. The Agency defines cost recovery initiated as civil actions that are (1) referred by the regions to EPA Headquarters; (2) referred by EPA to the Department of Justice; and (3) filed by the Department of Justice.

The $300 million consists of $242 million in site obligations and $60 million in indirect and enforcement costs. The dollar figure for total site obligations was obtained from the Agency's accounting system, as modified by additional updated information from the regions and other Superfund program offices. The methodology that the Agency used to develop the obligations and the number of sites appears to be reasonable. The methodology used to obtain the indirect and enforcement costs was previously discussed.

Should your staff have any questions, please have them contact Ernest E. Bradley III, Assistant Inspector General for Audit, on 382-4106.

Sincerely,

John C Martin

John C. Martin

Senator LAUTENBERG. Regarding the State cooperative agreements, the competition factor seems to be a serious, significant one there. Have you found that the States award contracts without competition? I think you said that in your testimony.

Mr. MARTIN. Yes, that is a problem. There are a number of more or less routine procurement kinds of violations that we routinely found as we examined State cooperative agreements. I, like the Administrator, believe that it is an outstanding way to do our business. But at the same time, we cannot enter into the agreement with a State that is not ready or does not have the means available to it to fulfill the agreement.

Many times, again, we are talking about fairly complicated procurement practices or, in some cases, I think pretty standard practices. But there are a whole variety of issues that relate all to procurement where we found problems.

Senator LAUTENBERG. States sometimes give contracts to the nonlow bidder?

Mr. MARTIN. Yes, we found that that has happened.

Senator LAUTENBERG. Is that of and by itself a poor practice?

Mr. MARTIN. Of course, as I understand the procurement system, there is no absolute requirement that the low bidder be selected. It is usually phrased: the lowest qualified bidder. In those cases, you could get into some dispute over the awarding official's interpretation as to who was the lowest responsible bidder.

Senator LAUTENBERG. If we have the lowest qualified bidder in the process, are there instances there where states do not award contracts to the lowest qualified bidder?

Mr. MARTIN. In our view, we would not have raised the issue if we had found absolute assurance that in the cases where the lowest bidder was not selected that there were absolutely clear prevailing reasons why that would not happen. In our view, though, bidders who were qualified were passed over in favor of others. Of course, there were reasons given, but it is again a question of dispute as to whether their reasons are legitimate or not.

Senator LAUTENBERG. Do you find States agreeing to modifications of contracts, change orders, without producing adequate justification?

Mr. MARTIN. Yes, Senator, that is another situation. Again, we are back to what should be standard good-government kinds of practices. And when those are lacking, when they are not available for whatever reason—they either do not exist in the State system or they are simply abused—you get into problems. That is, again, another clear example of what we found.

Senator LAUTENBERG. So then if those weaknesses are abundant, then we would have to ask EPA to establish a process by where they are more demanding from the States for reimbursement.

Mr. MARTIN. That is exactly correct. We did, as I said in my testimony, principally three audits of EPA regions from that point of view, that we think they need to be more aggressive and more demanding in making sure that, again, the basic kinds of good government procurement practices are followed. And if they do that, sure, there are going to be problems, but I think they are going to be diminished a great deal. They certainly will not be to the extent like we have already found, where some States did not have any practices that were related to the kind of work we want done. They are just totally nonexistent. That should not occur.

Senator LAUTENBERG. Is this consistent with those States' procurement practices generally? Are you saying that they violated their own normal procedures in the case of these cleanup responses? Or do some of these States, have you found, not have routine procurement practices?

Mr. MARTIN. I would say, Senator, that basically we found that their activities were not in accordance with federal practices. Mr. Bradley may want to comment a little further on that.

Mr. BRADLEY. A couple of the states we looked at actually had an adequate state procurement system, but the environmental agency within the state had not adopted the state's procurement system itself, which would have met a lot of our objections.

Senator LAUTENBERG. So you think it was just isolated to the environmental function. I am just curious. You raised the question. Do some states not have procurement procedures that resemble ours or that are orderly and so forth? Is there laxity in lots of states? I am not going to ask you to identify the states.

Mr. BRADLEY. Again, we did not look at the overall states' procurement system, but we did find that the states that we looked at were not following the states' procurement system in those instances.

Senator LAUTENBERG. I was just curious. Thank you.

On the on-scene coordinator problem, the on-scene coordinators, according to EPA's report, have not done well in the administrative area. Documentation has certainly not been one of their strong points, and this affects cost recovery. If you do not document the costs, something we talked about before, you cannot successfully sue the responsible party for reimbursement.

Do you think that EPA has had difficulty with cost recovery efforts because of poor financial, technical or other documentation due in part by the inadequately trained or inadequately staffed on-scene coordinators?

Mr. MARTIN. There is no question about it, Mr. Chairman. As I said in my testimony, we have done what we call these unannounced site visits where auditors show up on the scene and really get into those individual books and records right at the site to make sure everything is being handled properly. It is without a question almost a universal problem, that the on-scene coordinator does not have either adequate training, experience or interest in adequately maintaining the record side of the work.

They are extremely, I think, dedicated people who really want to get the job done and have a site cleaned up, but in their minds that oftentimes does not necessarily equate with good record-keeping.

I believe that the agency, here again, has really taken a giant step forward in exploring a concept of business manager or offering some type of support to the on-scene coordinator for the business side of the site. That will be a tremendous help, because there is just no question that these people, as interested as they are in the cleanup, do not really have the same interest in the records.

Senator LAUTENBERG. So management has to stimulate that interest.

Mr. MARTIN. Absolutely.

Senator **Lautenberg**. And there are various ways to do that.

We thank you, Mr. Martin and your colleagues, for the Inspector General's side of things.

We again say to all of the witnesses that we think this was a very positive review. We recognize that steps are being taken to improve the process, but at the same time we have to admit that there have been weaknesses in the procedures that encourage some exceptional problems in terms of reimbursement, in terms of costing, in terms of our ability to try to get our cost-recover programs under way.

We will continue our oversight responsibility. I sought this assignment because I am very interested in a cleaner environment. Superfund II, as I call it, I think is a very well-designed program, quite well funded. We are sometimes at odds with the agency about pace. We are not at odds about mission. But no matter what the pace is, it has to be moved along with efficiency and effectiveness in terms of management.

You helped us strengthen that management obligation. And as I said to Mr. Thomas and his associates, we think that there is a good, earnest effort at trying to run things better. They have been candid with me on many occasions, saying look, something has gone awry here, we have had a problem, we are not up to where we ought to be, we have had a little sleepiness at the switch in a couple of places. That is not an admission of failure of the total program. It is an admission of the fact that this is quite a broad learning experience. But we are going to continue to apply the pressures to get the pace up to the level it ought to be in order to manage this program.

We thank all of you for being here.

Senator **Lautenberg**. That adjourns this committee hearing.

[Whereupon, at 11:35 a.m., the subcommittee adjourned.]

[Statements submitted for the record follow:]

STATEMENT OF LEE M. THOMAS
ADMINISTRATOR
U.S.ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

APRIL 29, 1987

Good morning, Mr. Chairman and members of the Subcommittee. It is a pleasure to appear before this new and important Subcommittee for the first time to discuss the Environmental Protection Agency's implementation of the Superfund program.

I will begin with an overview of our progress to date under both the old Superfund Act and the 1986 amendments and will show how the specific issues of concern to you--our emergency response contracts, cost recovery, and State cooperative agreements--fit into this larger picture. I might add that in these areas our Inspector General has been of invaluable help in evaluating and improving our programs, and we will continue to work closely with him in the future.

In brief, we are moving swiftly and strongly to regain the momentum we had in the program and to implement the requirements of the new legislation. The first and most obvious thing to stress about the program is its sheer magnitude and complexity. From a site inventory of about 8,000 in 1980, our CERCLIS inventory of potential sites had mushroomed to 25,000 by the time the Superfund Amendments and Reauthorization Act of 1986 (SARA) passed.

In the same period, despite a year's slowdown resulting from uncertainties about reauthorization, we had a solid list of accomplishments including:

- 20,023 preliminary assessments (PA's) and 6,484 Site Investigations (SI's) performed,
- 473 Remedial Investigation/Feasibility Studies (RI/FS's) started,
- 178 Records of Decision (ROD's) signed,
- 110 remedial designs initiated,
- 143 actual constructions (includes initial remedial measures) begun,
- 596 National Priority List (NPL) and non-NPL sites where a variety of removal actions, many of them major, had been completed to mitigate or eliminate threats to health or the environment; and
- Settlement agreements at 372 sites with a value of $626 million signed.

Currently, we have 375 RI/FS's underway, along with 51 remedial designs and 45 remedial actions. During Fiscal Year 1987, we expect to add another 123 RI/FS's, sign an additional 76 ROD's, initiate remedial designs at another 99 sites, and initiate construction at another 46. These figures exclude Federal facilities activities; in FY 1987, we expect that 47 Federal facilities RI/FS's will be started. We were able to put the program back in gear so quickly because the "pipeline" was full, and we were poised to move forward.

Even without the vast increases in resources, tasks, and complexity SARA presents, the Superfund program is clearly a major environmental undertaking and a dramatic management challenge.

Constant tensions are built into such a program between the pressures to respond and clean up and the pressures to spend monies wisely and effectively. Because of this, we have tried to move rapidly, while establishing methods and procedures for ensuring high quality results. I will go into this point in more detail later.

We are addressing the challenge of SARA with the utmost gravity, fully aware of both the new requirements and the tight statutory deadlines for accomplishing many of them. I believe we will meet the challenge and comply with the deadlines you have given us. Let me describe some of the steps we have been taking to make sure that we do so.

Even before the conferees had reached agreement on the details of the new legislation, we began work to identify the steps that would be necessary to implement the new law. It quickly became apparent that immediate action would be essential if the deadlines were to be met. In order to avoid delay, we decided to aggressively make use of interim guidances to initiate action and ensure national consistency of approach. The guidances were developed after extensive consultation with our regions and the States, and we will seek similar public comment and discussion from the public before proceeding to final guidance or rule-making. Some of the more critical guidances include:

* Transition guidance identifying major features of the new law (October 24, 1986),

- Interim selection of remedy guidance (December 24, 1987),
- Streamlined settlement guidance (February 6, 1987),
- Interim guidance to the regions on the designation of responsibilities (and interim delegation of new authorities); and
- Two removal guidances implementing new removal limits, the new consistency waiver, and requirements that removals contribute to efficient performance of long term remedies (April 6, 1987).

We will shortly issue the following additional guidances:

- Guidance on Federal and State applicable and relevant and appropriate requirements (ARAR's),
- Guidance on a variety of issues relating to expanded State involvement in the Superfund process;
- Federal response actions under the Underground Storage Tank (UST) authorities; and
- Guidance on a variety of enforcement issues, including special notice procedures, non-binding preliminary allocations of responsibility, de minimis settlements, and mixed funding.

In addition, the revised National Contingency Plan is being assembled for proposal in July, 1987. Technical reports on the hazard ranking system (HRS) are being reviewed within the Agency for proposal this fall. An Advance Notice of Rulemaking will be issued shortly to solicit comments on technical assistance grant issues, and we anticipate an Interim Final Rule this fall. In addition, EPA and ATSDR recently published a required list of 100 toxic substances in the Federal Register, together with a proposal relating to the preparation of toxicological profiles.

We also have moved vigorously to carry out our new responsibilities under Title III of SARA, "The Emergency Planning and Community Right-to-Know Act." Title III establishes a structure for emergency planning by creating State emergency response commissions, emergency planning districts, and local emergency planning committees. Facilities which store or use chemicals listed pursuant to the Title are required to submit material safety data sheets to these State and local organizations, as well as report toxic chemical emissions to Federal and State governments.

Title III sets a series of stringent deadlines, and we have met each one: Within thirty days of enactment, we published the required list of extremely hazardous substances and an interim final rule establishing a threshold planning quantity for each substance. I signed the final rule on April 17, 1987. Also within thirty days of enactment, we initiated a study of emergency systems to prevent releases of the extremely hazardous substances into the environment. An interim report is required by May 17, and we hope to meet this deadline too.

Title III required us to propose regulations for reporting formats for the community right-to-know provisions within 90 days of enactment. We did so and project a final rule by August 17, 1987.

Finally, along with the National Response Team, we met the March 17 deadline for publishing the Hazardous Materials Emergency Planning Guide, which will assist communities in planning for hazardous materials incidents. In short, we are well along the way to implementing Title III, as well as the rest of SARA.

Emergency Response Program

Let me turn now to one of the great success stories of our Superfund program - our removal authorities and how we have been implementing them. The removal program was authorized in the original Superfund to permit us to respond rapidly to releases and threatened releases of hazardous substances. The cost and duration of a removal action was limited to up to $1 million or up to 6 months duration, except in emergency circumstances. Since the beginning of our removal program, through March 31, 1987, we have completed 746 removal actions, with Superfund obligations totaling $207 million. To date, we have initiated 90 new removals in this fiscal year alone. We are proud of our efforts in this program, which have resulted in the mitigation or elimination of immediate threats at over 600 NPL and non-NPL sites--many of them requiring substantial cleanup activities.

Many of the removal actions resulted in the complete elimination of hazards. Hundreds of sites that might have become NPL candidates have thus been remedied and require no further action.

In 1983 and 1984, following years of informal procurement of cleanup services, we awarded our first Emergency Response Cleanup Services (ERCS) contracts, which provided a new and more structured approach. Four geographical ERCS zones were defined according to regional rates of activity. A Request for Proposal was sent to 235 companies, seven of which submitted proposals. The ERCS contracts provided for minimum and maximum amounts of cleanup services, equipment, and materials to be ordered by

EPA on an indefinite qualtity, indefinite delivery basis at prenegotiated fixed rates. Services were to be available twenty-four hours a day, with delivery within response times specified in the contracts. Subcontracting was required for transportation and disposal of hazardous substances at the removal sites.

Since the beginning of the program and the award of the original ERCS contracts, a number of changes have occurred in the scope and operation of the removal program, and the cost of removal actions has also been increasing annually. New requirements established by SARA, RCRA, the NCP, and other legislation and regulations have combined to increase both the cost and complexity of removal actions. Our program may now respond to a broader range of hazardous substance incidents than ever before. To address the program as it has evolved, and to obtain greater competition, we are implementing a new contract strategy.

We will still use removal contracts similar in concept to the four original zone contracts, but we will award many more contracts. We intend to place approximately 25 regional contracts, a number of which will be reserved for small and disadvantaged businesses. The size of the areas within which contractors must respond will be reduced, and the required response times will be made far less rigorous in as many cases as possible. Of course, the need for rapid action in true emergency situations remains, and at least one contract in each region will provide quick response capabilities for critical situations.

We will use site-specific contracts when unique services or longer delayed response initiation time is wanted. These contracts will increase competition by obtaining competitive bids on specific activities, as well as by allowing more companies to participate in removal actions.

Site-specific contracts will be awarded on a limited or full and open competition basis depending on the time available prior to initiation of a response. When a removal action allows a response initiation time of four to nine months, the action will be open to competition among prequalified firms within the appropriate region. Removals with longer response initiation must be subject to full and open competition for the site-specific contract.

Based upon contracting and program deficiencies we recognized in the program, we have also made a number of major improvements which assure that our contracts better protect the Government's interests and prevent contractors from obtaining excessive profits. Instead of our old reliance on fixed rates, we now place greater emphasis on cost reimbursable payment items, and we have improved the pricing techniques when we do use fixed rates.

In addition, we are working with the contractors to correct accounting system deficiencies through clearer definition of what constitutes an acceptable accounting, estimating, and billing system.

We have strengthened our own contracting planning and administration practices and procedures, reorganized our Procurement and Contracts Management Division to establish a separate section to administer removal contracts, and are decentralizing our contracting functions to provide day-to-day oversight of contracts at the regional sites.

These ambitious initiatives will require sufficient staff resources to be successful, and we have accordingly authorized the hiring of additional personnel, which will double the size of our Superfund contracting staff in 1987.

Finally, we are implementing recommendations from a recent in-house study of the business management of our removal contracting programs to achieve more businesslike operations in our financial, administrative, and program activities.

Based on our perceptions of the strengths and weaknesses of the program, we undertook these actions prior to receiving a report from our Inspector General which concluded that competition was inadequate, that defects in planning and negotiation resulted in the award of contracts which may not have been as cost effective as possible, and that contract administration was ineffectual. We believe that our initiatives will greatly enhance program cost effectiveness, efficiency, and responsiveness, and we are committed to taking whatever additional steps may be necessary to improve our support of the removal program.

The removal program is particularly subject to the tension I mentioned between the need for speed and the desire for cost effective results. Given the grave threats to public health and the environment we face in removal situations, we have chosen to err on the side of safety, while constantly working to improve our quality control and effectiveness.

Enforcement and Cost Recovery

One of the other key elements of our Superfund program is the use of our enforcement authorities to compel cleanup or to seek reimbursement for cleanups financed by the Fund itself. Since the resources available to the Fund are limited in comparison to the number of potential sites in need of cleanup, the ability to compel private party efforts or to recover our costs is critical to the success of the program. Section 107 of CERCLA authorizes recovery of response costs incurred by the government from responsible parties. It is our policy to seek recovery of all costs involved, including site specific costs, enforcement costs, indirect costs, and interest.

Our cost recovery program has constantly improved in efficiency and in amounts recovered. We expect that progress to continue.

Section 106 authorizes the government to compel responsible parties to take actions at sites to reduce the threat of an imminent and substantial endangerment. It is our policy to achieve settlements with responsible parties that require them, whenever possible, to undertake the necessary work at a site subject to proper oversight. This preserves the Fund monies for abandoned sites. If a settlement cannot be reached, we use Fund monies for the cleanup and seek to recover them, generally cleanup has been completed.

As of March 1, 1987, EPA had achieved $626 million in settlements for site cleanups. In addition, under our Section 107 cost recovery authority, we had reached settlements worth over $46 million with responsible parties for our past costs. Further, the Department of Justice has filed 87 active cost recovery cases seeking more than $149 million on our behalf. We have referred an additional 35 cases worth over $52 million to the Department of Justice, and we are presently reviewing another 16 cases seeking over $16 million in cost recovery referred to Headquarters by our regions. This represents a total of $889 million in cleanups.

The appropriate way to measure the success of the cost recovery program is to identify the universe of sites potentially ready for cost recovery and then to evaluate the cost recovery activity initiated against that universe. The sites that should be included in the potential universe are those with a remedial action initiated or those with a completed removal action, taking into account whether financially viable responsible parties are available.

Using obligations for removal, remedial, enforcement, and administrative support activities, approximately $460 million is potentially ripe for cost recovery action. The Agency has initiated cost recovery for approximately $300 million, or 65 percent, of this amount. Our recovery rate--that is, the amount we have received in settlement versus the amount we sought, is approximately 74 percent for settled civil actions.

The essential points for an effective cost recovery program are a system for documenting our costs to support recovery and a system for routinely moving cases through the legal system. We have management systems for the timely review of sites for cost recovery action and case development in place, and we are nearing completion of procedures for administratively settling cases, as authorized by SARA. We are also continuing our efforts to streamline the civil referral process, and a senior management committee has been established to review and decide settlement issues to bring cases to resolution more quickly.

On the finance side, we now have the accounting systems in place to determine accurately how much the Agency has spent on each site. In addition, to meet cost recovery requirements, we have established procedures to provide all necessary documents to support these costs. With these two major initiatives completed, we are confident that the Agency now routinely captures the necessary costs and will continue to do so for all future sites.

With the experience we have gained in overcoming our initial problems in cost recovery documentation, we are now in a position to help the States grapple with similar issues.

State Cooperative Agreements

Cooperative agreements with the States represent a final critical element contributing to our success in implementing the original Superfund and SARA and are also a subject in which you expressed particular interest.

Because of both practical needs and statutory direction, involvement of the States in our cleanup program is essential to its success. The challenge is to encourage State responsibility without losing control over the quality of work performed and the documentation required for cost recovery.

The mechanism used to give States operational responsibility for aspects of the Superfund program has been the cooperative agreement, which is essentially a bilateral agreement between EPA and a State under which the State assumes responsibility for carrying out designated activities at specific sites. The first cooperative agreement was entered into in 1981, and since then, we have signed agreements with virtually every State.

During the first few years, cooperative agreements were single site agreements that provided funding for a State to. conduct work at a particular site. Since staff, equipment, and management systems are often funded on an across-the-board basis, it quickly became apparent that a different approach was needed.

In 1984, EPA expanded the cooperative agreement vehicle to provide States with the opportunity to enter into multi-site cooperative agreements (MSCA's) with EPA. A MSCA is an umbrella agreement that includes response activities at two or more sites within a State. The MSCA concept provides

States with increased flexibility in the use of their cooperative agreement resources, since funds not used at one site may be transferred to another MSCA without deobligation and reallocation. Thus, the funds may be applied where the need is greatest.

Cooperative agreements currently provide funding for:

* Pre-remedial activities to obtain data necessary to evaluate whether a site should be placed on the NPL,
* Remedial activities,
* Oversight of response conducted by responsible parties,
* State enforcement actions,
* Removals where time is not critical; and
* Management assistance to defray the cost of State involvement during Federal-lead remedial response.

Our experience with State cooperative agreements has, on the whole, been a positive one, and States now conduct most Preliminary Assessments (PA's)). In recent years, they have taken an ever increasing role in the remedial program, and currently $238 million has been obligated to States for over 100 NPL sites across the country.

Superfund cooperative agreements are awarded and administered by our regional offices in accordance with EPA's general assistance regulations and the National Contingency Plan. The offices maintain a close working relationship with the States throughout the course of a project. This interaction allows us to identify problems early in the process and move swiftly to ensure compliance with our regulations. It is consistent with the desire of the

Congress that there be substantial Federal involvement in these projects, as evidenced by the legislation's authorization of cooperative agreements instead of grants. Problems are brought to our attention through the Inspector General's audit process, and we work with the States to correct deficiencies.

In a program this size, and with the diversity of players at the State and regional level, it is not surprising that problems arise from time to time. These problems can and should be addressed in the normal program operations context, and we remain committed to the use of cooperative agreements and the expanding role of States in the Superfund program.

To date, audits by the Inspector General have identified three recurring issues associated with the cooperative agreements. The first concerns compliance with our procurement regulations. In most instances, State procurement procedures comply with our requirements. When they do not, States must agree to comply with our regulations. Some audits have found, however, that States are not complying with their own procurement requirements, that they are entering into cost plus percentage of cost contracts, and that some are incorrectly charging labor hours.

We have been vigorously working with States to overcome specific deficiencies and to provide training to overcome these problems. For example, we have provided funds to the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) to conduct procurement training seminars, published guidance on procurement under the Superfund program, and established a construction contractor management course.

The second problem is delays in the program caused by State delay in engaging contractors. In some cases, it can take many months to achieve a project start. We have instituted a State review program under which we review State procurement procedures and work with State agencies to identify ways to develop expedited contracting mechanisms that will still meet Federal and State competitiveness requirements.

Finally, in any program of this dimension, qualitative management problems will periodically occur. One area in which we have experienced some difficulty is State-conducted PA's. Even at low priority sites, States are sometimes reluctant to conclude that no further Superfund action is warranted and that, therefore, no Site Inspection (SI) is needed. The ratio of SI's to PA's has thus been increasing without a commensurate increase in the number of sites to be placed on the NPL. Sometimes we find that RI/FS's do not contain all the documentation and analysis required.

We are especially concerned that States understand the new SARA requirements, and we are taking steps to ensure that State personnel are fully trained in them. SARA requires development of a regulation to implement State involvement responsibilities, and we have made the regulation a high priority; it will be part of the revised NPL to become final in April, 1988.

We intend to continue to expand our partnership with the States and to take full advantage of the opportunity Congress has given us to build a program infrastructure in the States fully capable of managing virtually all aspects of the Superfund program. Some of the key elements of the program we are developing include

- A State/EPA memorandum of agreement that emphasizes and outlines the responsibility of EPA and the States to involve each other in project development, regardless of which has the lead responsibility,
- Identification of oversight principles by which the EPA/State relationship will be conducted, given a newly expanded State role in the program.

Many challenges remain before us and the States in developing and supporting strong Superfund programs. Among the most significant is building an infrastructure capable of managing this complex program, which has more than quadrupled in size in the past year. Many States have not yet taken the financial and management steps they must in order to provide the necessary cost shares and management support for their projects. The State involvement regulations should go a long way in supporting States in their efforts.

In short, there are some risks involved in attempting to put an increasing share of the program into the States, but without that attempt the program will not succeed. Our job is to create and utilize oversight mechanisms, such as the IG's audits, to stay on top of what is happening as we delegate.

To summarize, Mr. Chairman, we are running a huge and critical program and are working vigorously to raise it to higher, sustainable levels. In any program of this dimension, problems and difficulties will occur, and it is necessary to construct mechanisms for diagnosing and dealing with them. We are constantly evaluating our progress along these lines, and we are proud of our accomplishments to date in implementing CERCLA and SARA and expect to meet the deadlines you have given us. We look forward to keeping you informed of our continuing progress in implementing the Superfund program, a program of vital importance to every State and every citizen.

This concludes my formal testimony, Mr. Chairman. My staff and I will be happy to respond to any questions you may have, either now or in writing for the record.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Honorable Frank R. Lautenberg
Committee on Environment and
Public Works
United States Senate
Washington, D.C. 20510

Dear Senator Lautenberg:

Thank you for your May 13, 1987 letter regarding follow-up questions to the April 29, 1987 hearing on Superfund implementation before the Subcommittee on Superfund and Environmental Oversight. Enclosed are responses to questions 2, 4, 5, 6, 9, 11, 12, 13, 20, 21, 22, and 25. We are assembling the information necessary to answer your other specific questions and will provide you with responses in the near future.

Thank you for your interest. If I can be of further assistance please contact me.

Sincerely,

Win Porter

J. Winston Porter
Assistant Administrator

Question 2: During the hearing, you testified that EPA was doubling the size of its Superfund contracts personnel. Please provide the Subcommittee with:

a. All current Superfund, or Superfund related, contracts personnel by job title and number of employees within each job title;

b. Job descriptions for each Superfund, or Superfund related, contracts personnel;

c. The number of Superfund contracts personnel, by job title (per 2(a)), who were employed by EPA on 9/30/86;

d. The number of employees identified in 2(c) who have left the EPA's Superfund contracts area since 10/1/86;

e. Job descriptions and number of staff within each job description planned to be hired by EPA for work in the Superfund contracts area in FY 87 and FY 88 (provide separate information for Regional hires);

f. A detailed description of EPA's efforts, to date, to hire such staff;

g. The number and job descriptions of those people actually hired, to date, who constitute a portion of the "doubling" of the EPA Superfund contracts staff to which you referred; and,

h. The resumes of all personnel in 2(g), above.

Answer: Information requested regarding contract personnel recruitment is presented as follows:

> Attachment I - With the exception of job descriptions, the information requested in subcategories 2a, 2c, 2d, 2e and 2g is contained in the monthly Procurement and Contracts Management-Division Monthly Personnel Report provided under this attachment. However, SF171s will be provided at a later date.

Attachment II - All PCMD Position Descriptions by position title, series, and grade level are provided under this attachment. Position descriptions were requested under subheading 2b, 2c and 2g.

Attachment III - A detailed description of EPA's efforts, to date, to hire contracting staff is provided under this attachment. Recruitment efforts requested under heading 2f are provided under this attachment.

NOTE: The attachments referred to have been retained in committee files.

Question 4: For fiscal years prior to FY 87, in what month did the Regions begin to gather information and plan to send their submission for the next year's Superfund Comprehensive Achievements Plan (SCAP)?

Answer: For FY 85, the Regions began the SCAP data gathering process in June, 1984. For FY 86, the Regions began the SCAP data gathering process in June, 1985.

Question 5: For fiscal years prior to FY 87, in what month did the Regions formally submit to Headquarters their SCAP requests for the following fiscal year?

Answer: For FY 85, the Regions submitted their SCAP request in August, 1984. For FY 86, the Regions submitted their SCAP request in July, 1985. The SCAP Manual (see enclosure) now prescribes July as the month for Regional SCAP submissions.

Question 6: When asked why the Regions were so late in formally submitting their SCAP requests for FY 87 (December 1986), Mr. Porter responded:

> We were certainly working on them, Senator. You're right. But remember, those numbers started coming in December. There was a lot of work on-going and we were trying to round up the entire program. But the process did start in December.

It is to be expected that the Regions would be working on their SCAP plans prior to their formal submission to Headquarters. It is impossible, however, from Mr. Porter's response to determine whether it was normal procedure to submit Regional SCAP plans to Headquarters for the current fiscal year during the last week of December. December, after all, is the end of the first quarter of a fiscal year.

Question a. What does, "We were certainly working on them....," mean?

Answer: The circumstances surrounding the SCAP preparation for FY 87 were extraordinary considering the program proceeded from the brink of shutdown to reauthorization. We first discussed the FY 87 SCAP at a meeting with the Regions in June, 1986. We talked about the need to keep an update of projects that would be candidate sites for funding in FY 87. SCAP instructions for FY 1987 were sent to the Regions in late September, 1986. A SCAP workshop was conducted on October 15-16, 1986 focusing on new SCAP Procedures and the plans for preparing the FY 87 SCAP. The Regions were asked to submit their FY 87 SCAP requests by mid-November. By early December, 1986, the SCAP database was updated and during December, Regional dollar and output commitments for the remedial, removal, and enforcement programs were negotiated. Preliminary targets for the Agency's Strategic Planning and Management System were also determined. On January 14, 1987, the initial FY 87 SCAP was forwarded to the Regions.

Question b. When did Headquarters first ask the Regions to begin to develop their FY 87 SCAP requests?

Answer: See answer to question 6a.

Question c. Is it normal procedure to wait until the end of the first quarter of a fiscal year for the Regions to formally submit their SCAP requests to Headquarters?

Answer: The SCAP Manual, which is enclosed, lays out the normal process for preparing a SCAP. Since the SCAP is an iterative process, the fourth quarter update, which is due in July, serves as the basis for allowances for the first quarter of the following year.

Question d: What does, "We were certainly working on them....," mean?

Answer: See answer to question 6a.

Question e: When did Headquarters first ask the Regions to begin to develop their FY 87 SCAP requests?

Answer: See answer to question 6b.

Question f: How does this compare to previous years?

Answer: See answer to question 5.

Question g: When were the Regions first told to submit their SCAP requests during the last week in December?

Answer: See answer to question 6.

Question 9: You and members of your staff were intimately involved in the Conference Committee's reauthorization of Superfund. You were aware of virtually every agreement reached by the Committee as they were, indeed, reached.

a. Were EPA staff briefed, either formally or informally, about the direction of the Conference Committee?

Answer: EPA staff in affected offices were briefed most often informally, about the direction of the Conference Committee. In addition, the status of deliberations was discussed by the Administrator at his weekly staff meetings with the Assistant Administrators.

b. Were briefing materials, including Conference Committee language or drafts of such language available to you and to your staff?

Answer: Such materials were available to my staff and me.

c. Was such language shared with other EPA staff?

Answer: Such language was shared with EPA staff on a need-to-know basis.

In order to be responsive to the ultimately lengthy process of Superfund reauthorization, the Agency set up a task force directed by the Office of the Administrator and staffed by knowledgeable employees experienced in different areas of Superfund implementation. Offices represented included the program office, enforcement offices, general counsel, grants and contracts, and regions. As specific issues, e.g., community right-to-know arose during the process, appropriate representatives were added. The members of the task force met regularly and were provided with materials including draft language; their responsibility was to provide the analysis required by the proposed language or as otherwise requested, often by Congress. They were also responsible for keeping their senior management apprised of issues and progress; and for calling on other staff as required for analysis and expertise.

Although §113 of CERCLA, as amended, allows three years from completion of a removal to initiate cost recovery action, a goal is to begin cost recovery activity within one year after completion of the removal. However, if further response action (i.e, remedial action) is planned to be initiated at a removal site within three years after completion of the removal, the Agency may wait to bring the cost recovery action for all response costs when the remedial action is nearing completion. For remedial actions, we intend to initiate cost recovery within 18 months after the signing of the Record of Decision (ROD) or during the later phases of construction of the remedial action, if the construction is expected to take more than two years after the ROD is signed. We have given higher priority to cases involving greater than $200,000 in response costs. Adherence to these time frames will ensure that current evidence and knowledgeable witnesses will be available to support the prosecution of the action and that the Agency will not be faced with statute of limitation risks.

Generally, for remedial sites, after the RI/FS is completed, the Agency will provide notice to PRPs (if there are any) and give the PRPs an opportunity to undertake remedial design and remedial action as well as reimbursing EPA for the RI/FS. If the PRPs fail to reach an agreement with EPA to conduct the RD/RA, EPA will proceed with a Fund financed action. As the Remedial Action nears completion, EPA will initiate a cost recovery action to recover all costs: RI/FS, RD/RA, enforcement, indirect costs and interest.

Question 12: For the above question, please supply the dates of each specific commitment, obligation, billed hours, and outlays. Specify for each individual RI/FS, remedial design, and remedial action the number of days which elapsed between the date of a program office commitment and the date on which the commitment was placed in the Agency's Financial Management System (when it became, in essence, an obligation). Specify also, for each RI/FS, remedial design and remedial action the number of days which elapsed between the obligation and the first billed date.

Answer: The enclosed report from the Financial Management System provides the dates for commitments, obligations and outlays for remedial projects started in the first half of FY 87. The system does not contain information on billed hours.

Question 13: Please explain the reasons why there is any lag time between commitment and obligation and between obligation and actual billed hours.

Answer: There are three main mechanisms for obligating funds in the Superfund program: contracts, interagency agreements, and cooperative agreements. For interagency agreements and cooperative agreements, commitment and obligation are achieved in the Region. Generally, signature by the financial management personnel constitutes commitment, and shortly thereafter, signature by the Regional Administrator constitutes obligation (1 to 3 day lag). For contracts, commitment occurs when the Regional Administrator signs the purchase request (PR). Then the PR is sent to the Contracts Management Division (Washington, D.C.). Obligation occurs when the contracting officer signs the contractual document. The lag time in this case can range from 1 to 2 weeks. The time period between obligation and billed hours varies according to mechanism and the immediate availability of a contractor. Furthermore, it depends on how timely or frequently the other party, i.e. a contractor, the State, or Corps of Engineers, bills the Agency.

Question 20: Since becoming aware of the deficiencies cited in the Inspector General's Report on Cost Recovery, please detail those steps which the Agency has taken to alter its PRP Search procedures, and its strategy for recovering from PRPs in or near, bankruptcy.

Answer: Although EPA has several ongoing activities to further improve the PRP search process and results, specifically, the following activities have occurred or are underway:

- OWPE has developed a revised PRP Search Manual which incorporates available methodology, technology, and Agency guidance into a useable form to provide for early, accurate searches.

- NEIC Contract Evidence Audit Team (CEAT) contract will audit completed PRP searches to ensure consistency.

- OWPE will evaluate, through our Technical Enforcement Support (TES) contract, FY 86 and 87 searches to determine the adequacy of post-guidance/post-SARA PRP searches.

- OWPE and the Regions are in the process of hiring civil investigators to develop and implement national/regional PRP search strategy to facilitate consistency.

- OWPE/NEIC PRP search workshops are being conducted in HQ and the Regions to educate EPA staff, contractors, and states on the new guidance and procedures.

- NEIC is conducting contractor training sessions on the "nuts and bolts" of PRP search methodology.

Information on EPA's strategy for recovering from PRPs in, or near, bankruptcy, will be provided with the answer to question 19 at a later date.

Question 21: What steps are currently taken to identify PRPs at sites?

a. What further steps does EPA plan to take for identifying PRPs?

Answer: As explained in EPA's PRP Search Manual, Regions are instructed to conduct PRP Searches early in the Superfund cleanup process, usually concurrent with the initiation of the National Priorities List (NPL) listing process. Tasks generally performed in all PRP Searches include:

1. Agency record collection and file review
2. CERCLA Sec. 104(e) Letters/RCRA Sec. 3007(c) Letters
3. Financial status determination
4. History of operations at the site
5. Interviews with government officials
6. PRP name and address updates
7. PRP status/PRP history
8. Records compilation
9. Report preparation
10. Title search

In addition, another 18 more specialized tasks may be performed depending on the site being investigated. These tasks are grouped into the following four categories: (1) obtaining specialized information (eight tasks); (2) performing waste stream comparisons (three tasks); (3) creating data bases (three tasks); and (4) performing other tasks (four tasks).

EPA is also planning to implement other steps to aid in identifying PRPs. These are described in the answer to question 20.

Question 22: When does EPA consider a site to be ready for cost recovery?

a. Does completion of a phase of work allow EPA to recover for the cost recovery of that phase?

   1. For example, once our RI/FS has been completed, does the Agency seek recovery for the cost of the RI/FS?

b. Once a removal is completed, does and can the Agency seek cost recovery for that removal?

   1. Is this the case even if further work is planned at the site where the removal occurred?

Answer: As you know, CERCLA, as amended, now contains specific language on the statute of limitations for cost recovery actions. Section 113 (g) requires that a cost recovery action be commenced:

1) for removal action, within three years after the completion of the removal action, except that such cost recovery action must be brought within six years after a determination to grant a waiver under 104(c)(1)(C) for continued response action; and

2) for remedial actions within six years after the initiation of physical on-site construction of the remedial action, except if the remedial action is initiated within three years after completion of the removal action, the removal costs may be recovered under the remedial action statute of limitations for cost recovery (i.e. within six years after the initiation of on-site construction of the remedial action.)

Question 25: Is the Agency acting on the IG's recommendation that a management information system be developed to trace enforcement actions? If so, please describe the system. When will it be operational?

Answer: Over the last three years, EPA has developed and enhanced management information systems to track enforcement activities. In March 1984, EPA implemented the Case Management System to process information regarding orders, consent decrees, and civil actions. In September 1984, the system was enhanced to track planned and actual enforcement activities and evaluate regional performance. The capability to track oversight of responsible party cleanup activities under orders and consent decrees was also provided.

In October of 1986, the system was further enhanced to permit integration of enforcement activity data with related contract resource planning and allocations efforts. Further, full integration of enforcement and fund financed activity data was provided. As before, planned and actual activities are tracked and regional performance evaluated for all aspects of the program-removal, remedial, and enforcement.

Current system development activity centers on moving the existing systems to the EPA mainframe computer and shifting data entry and management responsibilities from Headquarters to the Regions. The system, CERCLIS, is designed to process financial, enforcement, and site cleanup data. Full integration of all data for a site as well as enforcement specific data will be provided. The project schedule calls for implementation in FY 1988.

In addition to the Case Management System, EPA developed and maintains the Cost Documentation Monitoring System. Its purpose is to support the process of developing full documentation of site costs for §107 civil referral, negotiations, and litigation packages.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 22 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Honorable Frank R. Lautenberg
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Senator Lautenberg:

Enclosed are remaining responses to your letter of May 13, 1987. Included are responses to questions 1, 3, 6, 10, 14, 15, 16, 17, 18, 19, 20, 23, 24, 26, 27, and 28.

If I can be of further assistance please contact me.

Sincerely,

J. Winston Porter
Assistant Administrator

Question 1: The Subcommittee has been informed that the contracting process of the Army Corps of Engineers is "Streamlined" when compared to EPA's contracting process. It is opined that the Corps' process is able to move from the proposal phase to award months sooner than EPA's. Please prepare a thorough comparative analysis of both EPA's and the Corps' contracting procedures for the Subcommittee's use. Delineate for the Subcommittee those aspects of the Corps' procedures that: 1) are similar to those of EPA's; 2) are different than EPA's; 3) for each of those that are different, a determination of whether their inclusion into EPA's procedures would be beneficial or detrimental; and, 4) a rationale for each determination in 3, above.

Answer: EPA's and the Corps' contracting procedures for Architect/Engineer (A/E) services are similar in that both follow the required Brooks Act (P.L. 92.582) provision of the Federal Acquisition Regulations. Due to the critical nature of A/E services, the Brooks Act requires A/E selection be based solely on technical qualifications. Once the most technically qualified A/E firm is selected; a cost proposal is requested, a cost audit is conducted, and a contract is negotiated and awarded.

There are major differences between EPA and the Corps on the nature and type of A/E contracts procured. Therefore, it is very difficult to compare aspects of each Agency's procedures. Major differences are described below:

- The Corps normally awards firm fixed priced contracts to conduct single remedial designs on a site-specific basis. EPA awards cost reimbursable contracts on a zone or Region wide basis to conduct a range of remedial activities (RI/FS, RD, construction management, and technical/management support activities) for many Superfund sites over a 4-5 year period.

- The Corps and EPA use a two step technical evaluation process where the first step results in a short list of technically qualified firms. The Corps uses a streamlined second step, which generally involves ranking the short listed firms based on an internal review of the A/E firms past performance on Corps contracts. This works well because they are only awarding short-term, site specific contracts. EPA uses a more intensive second step, which involves requesting management plans from the short listed firms in order to have more detailed contract specific information for ranking the short-listed firms. We feel we need this additional contract specific information because we are awarding long term, multi-site contracts.

- The Corps lets contracts for site specific projects. The Corps' process, from advertisement to contract award, varies between 4-8 months, and is done for each individual site the Corps works on. The EPA generally lets technical support contracts that cover a wide range of services (e.g. RI/FS, RD, technical assistance). EPA's process from advertisement to award has taken approximately 12 months. However, once these contracts are in place, an A/E firm can be directly tasked to conduct work at numerous sites.

EPA and the Corps have discussed procurement procedures in an effort to improve the process of both agencies. A determination of the benefits or detriments of the differences and a rationale for the determinations is provided below.

- Due to the variable nature and extent of remedial activities that EPA conducts, the scope of work is not definitive enough to award fixed price contracts. Therefore, cost reimbursable contracts are necessary. Also, zone wide or Region wide contracts are more desirable than site specific contracts, since once in place, an A/E firm can be directly tasked to conduct work at numerous sites on a work assignment basis. Recognizing these advantages, the Corps has awarded several indefinite delivery contracts, which eliminates the need to procure A/E services for selected sites on a site specific basis. In addition, the Corps is considering utilizing cost reimbursable type contracts for more complicated projects.

- We have looked at the Corps technical evaluation process and other procedures in an effort to shorten our technical evaluation process. Although EPA feels it is necessary to do a thorough technical evaluation due to the duration and multi-site nature of our contracts, we will incorporate changes in our process to shorten the procurement time for our current ARCS procurements.

- Although EPA's procurement process is slightly longer, once in place our contracts allow us to start work more quickly than site by site procurement.

Question 3: You also testified that EPA would double the size of its On-Scene Coordinators (OSC's). Please provide the Subcommittee with:

Question a. The number of On-Scene Coordinators, by Region who were employed by EPA on 9/30/86.

Answer:

Region 1	12
Region 2	18
Region 3	13
Region 4	13
Region 5	15
Region 6	8
Region 7	13
Region 8	7
Region 9	4
Region 10	5
	108

A small number of these 108 OSC's act as supervisors and contract project officers in addition to their OSC responsibilities.

Question b. The Government Service (GS) level of each OSC identified in 2(a), above.

Answer: See Attachment

Question c. EPA's FY 87 and FY 88 hiring plans for each Region.

Answer: See Attachment

Question d. A detailed description of EPA's efforts, to date, to hire new OSC's.

Answer: Each Region is responsible for recruiting its own OSC's. Though finding experienced candidates is never easy, Regions have been able to fill their vacancies and we have not found it necessary to undertake any special national recruitment effort. (See attachment for Regions' current recruiting plans.)

Question e. Actual hires, by Region, and by GS level of all OSC's who constitute a "doubling" of OSC's to which you referred.

Answer: We are expanding the number of OSC's and that we are doubling the number of financial managers (who are not OSC's). This discussion is on Page 33 of the draft transcript. Since October 1, 1986, the Regions have hired 37 OSC's. (Attachment shows how many each Region has hired).

Question f. The number of OSC's who left their positions since 10/1/86.

Answer: Since October 1, 1986, eight OSC's have left their positions.

Question g. The number of OSC's known to have left EPA's employ for employment with a hazardous waste contractor, the GS levels, EPA locations, and length of OSC service of such people.

Answer: We do not have records on which OSC's have left EPA for hazardous waste companies. The attachment lists the GS level and experience of the OSC's who have left since June 1, 1986.

NOTE: The attachments referred to have been retained in committee files.

Question 6: When asked why the Regions were so late in formally submitting their SCAP requests for FY 87 (December 1986), Mr. Porter responded:

> We were certainly working on them, Senator. You're right. But remember, those numbers started coming in December. There was a lot of work on-going and we were trying to round up the entire program. But the process did start in December.

It is to be expected that the Regions would be working on their SCAP plans prior to their formal submission to Headquarters. It is impossible, however, from Mr. Porter's response to determine whether it was normal procedure to submit Regional SCAP plans to Headquarters for the current fiscal year during the last week of December. December, after all, is the end of the first quarter of a fiscal year.

Question a. What does, "We were certainly working on them....," mean?

Answer: It is not normal for Regions to submit SCAP plans for a fiscal year during the last week of December. Normally the plans are submitted in July. Last year was unusual because of the uncertainty of reauthorization. We first discussed the FY 87 SCAP at a meeting with the Regions in June, 1986. The Regions told us that trying to prepare a plan without good information on the amount and availability of funding would be a futile exercise and extremely resource intensive. Moreover, the Regions attention and effort was then focused on keeping projects incrementally funded and getting ready to close down contracts if it became necessary. It was not an atmosphere conducive to long range planning.

Planning for the FY 87 SCAP began in earnest in September, when passage of the reauthorization seemed imminent. The process of putting the plan together took us four months. This was an unusual amount of time, but not surprising given the circumstances:

- Because of the slowdown, we were funding all projects on a month-to-month basis. We had to prepare new allowances for essentially every project. In a normal year we are working with a much smaller number of sites.
- We were preparing a spending plan much larger and for more sites than ever before. In FY 85 the remedial budget was $212 million. In FY 86 it was $116 million and in FY 87 it was going to be $450 million.

- In anticipation of the greater numbers of projects and dollars, we were using a computer for the first time to keep track of everything. The revised procedures needed so the computer could be utilized, caused some problems and delays.

- Many projects' costs had to be re-estimated to account for new requirements contained in the reauthorization.

These were the main factors that complicated the FY 87 SCAP planning process and caused it to take an extended periof of time. A considerable amount of work occurred during October and November, a period in which the Regions were also struggling to understand all the ramifications of the new law. By early December, 1986, the SCAP database was updated and during December, Regional dollar and output commitments for the remedial, removal, and enforcement programs were negotiated. Preliminary targets for the Agency's Strategic Planning and Management System were also determined. On January 14, 1987, the initial FY 87 SCAP was forwarded to the Regions.

Question b. When did Headquarters first ask the Regions to begin to develop their FY 87 SCAP requests?

Answer: We first discussed the FY 87 SCAP preparation in June, 1986. Regions were not given written instructions until September 1986, when reauthorization appeared imminent. We originally asked for the data by mid-November. This got delayed for about a month because of the complexities described in the answer to Question 6A.

Question c. Is it normal procedure to wait until the end of the first quarter of a fiscal year for the Regions to formally submit their SCAP requests to Headquarters?

Answer: No it is not normal for Regions to submit their SCAP request at the end of the first quarter. FY 87 was an unusual year as described in the answer to Question 6a. The initial SCAP for a fiscal year is due in the previous July.

Question d: What does, "We were certainly working on them....," mean?

Answer: See answer to question 6a.

Question e: When did Headquarters first ask the Regions to begin to develop their FY 87 SCAP requests?

Answer: See answer to question 6b.

Question f. How does this compare to previous years?

Answer: See answer to question 5.

Question g: When were the Regions first told to submit their SCAP requests during the last week in December?

Answer: See answer to Question 6b.

Question 10: The question of Superfund enactment, notwithstanding, it is troubling that EPA waited so long to receive Regional requests to get this program moving. You testified that EPA had to obtain borrowing authority for the Fund. That authority was not obtained until February, according to your testimony. The implication appears to be that the question of when the Regions submitted their SCAP requests is moot since a decision by Headquarters on the SCAP and the Agency's receipt of authority to borrow against the Fund were simultaneous. Please describe the process, in detail, whereby EPA obtained borrowing authority. Provide for the Subcommittee a description of the process by which EPA receives borrowing authority. Include in that description the roles of all other Federal departments, agencies and authorities which are participants in the process. Provide, also, a chronological, detailed account of all meetings, telephone calls, conversations, contacts, participants, etc. Please provide to the Subcommittee all documentation pertaining to this issue.

Answer: You expressed concern that EPA took too long to get the program moving after reauthorization. You also indicated that the question of when Regions submitted their Superfund Comprehensive Accomplishment Plan (SCAP) requests may indeed be moot since the decision by Headquarters on the SCAP and the receipt of borrowing authority were simultaneous. Finally you requested an explanation of the borrowing authority process.

The following information will clarify the borrowing process itself, describe the immediate steps the Agency took to avoid delays in gearing up the Superfund program, and I trust, dispel your concerns about what may appear to be delays due to either SCAP or borrowing authority decisions.

INITIAL BORROWING AUTHORITY OF $200 MILLION WAS APPROVED AND ISSUED TO SUPERFUND PROGRAM OFFICES IN EARLY NOVEMBER

Although we had to obtain borrowing authority before issuing allowances to the Regions so we could initiate a fully expanded program, we did not wait until our budget plan for FY 1987 and 1988 was fully developed to get the program started. We used a two-phased approach to ensure our critical and immediate needs were met while we developed the long term budget plan for the first two years of the reauthorized Superfund.

As I indicated in my testimony, we received approval from Treasury to borrow funds to support our program in advance of tax collections beginning in January. In fact, the Agency initially received a $200 million repayable advance from Treasury and had apportionment of these funds from the Office of Management and Budget as early as November 7.

The borrowed funds, coupled with $96 million in carryover funding and some additional revenues available from monthly interest payments and cost recoveries, meant the Agency had over $300 million in funding available between November and January. Those funds were issued to Regions and Headquarter's offices to meet our immediate programmatic needs.

DEVELOPMENT OF LONG TERM BUDGET OCCURRED BETWEEN LATE OCTOBER AND JANUARY

At the same time, we were developing a budget for both 1987 and 1988. By January, we had done a thorough program review to evaluate: all new and ongoing project needs, how we could best manage the enormous pipeline we have built over the past six years, and the likely impacts the new SARA amendments would have on our workload.

That process involved not only prioritizing over 600 new remedial projects and 500 removal projects that we plan to fund or oversee in 1987 and 1988, but also distributing an additional 900 new workyears to support these activities. We were faced with an enormous task which we accomplished in less than half the time normally allotted for developing our annual budget submissions.

Once we had developed a long term plan, we requested an additional $300 million in borrowing authority to support our programmatic needs through the second quarter. Treasury issued a warrent on January 21, 1987 approving the advance and OMB apportioned $250 million of the request for Agency use on February 2, 1987. (The final $50 million of this advance was later apportioned to the Agency as needed.) We then distributed allowances to Regions and Headquarters offices.

Since then we have received an additional $150 million in borrowing authority. We estimate that the $650 million in advances plus our estimated $761.3 in revenues from taxes, cost recoveries and interest will be sufficient to support our full 1987 appropriation of $1,411.3 million.

THE BORROWING AUTHORITY PROCESS FOR SUPERFUND

The Agency is given authority to borrow, i.e. obtain a repayable advance from the general fund ahead of estimated tax receipts, in §517 of Title V of the Superfund Amendments and Reauthorization Act of 1986 (SARA). When specified by Congress in the appropriations act, the Agency can then obtain these advances as necessary to carry out the purposes of the program.

The financial and accounting process by which we obtain these advances can be summarized in three steps:

1.) EPA sends a letter to Treasury requesting an increase in the amounts available to the Trust Fund as repayable advances. The amount of the increase requested is determined by the Agency's estimated needs for a particular time period, usually one or two quarters of a fiscal year. There are upper limit constraints which are determined both by our annual appropriation and §517 of the Superfund Amendments and Reauthorization Act of 1986.

2.) Treasury issues an appropriation warrant which makes available to the Trust Fund the amounts requested.

3.) EPA requests apportionment of the Funds from OMB. This allows the Agency to distribute the funds made available by Treasury to our various Regional and Headquarters offices.

SUMMARY OF DOCUMENTATION PROVIDED

We have attached all relevant documentation as requested. No records of telephone conversations were maintained as these transactions were, for the most part, routine in nature. A chronological summary of the documentation provided follows.

#	DATE	DOCUMENT
A	Oct 31, 1986	EPA Comptroller letter to Treasury requesting a warrant for $200 million in repayable advances. (Conference Report 99-977 providing 1987 appropriations is attached.)
B	Nov 3	Note to OMB Examiner with proposed three month operating plan for $286 million. (Note that carryover funding in this plan is shown as $89

		million. Later end of year closeout figures brought the 1986 carryover amounts up to $96 million.)
C	Nov 7	Treasury warrant setting up $200 million advance and SF 1081 recording payment to the Trust Fund.
D	Nov 7	OMB apportionment schedule providing the Agency authority to distribute $200 million advance.
E	Jan 21, 1987	EPA Comptroller letter to Treasury requesting a warrant for $300 million in repayable advances.
F	Jan 21 1987	Treasury warrant setting up $300 million advance and SF 1081 recording payment to the Trust Fund.
G	Feb 2	OMB Apportionment schedule providing additional $250 million in advance authority.
H	Apr 3	EPA Comptroller letter to Treasury requesting a warrant for $150 million in repayable advances.
I	Apr 6	Treasury warrant setting up $150 million advance and SF 1081 recording payment to the Trust Fund.
J	Apr 13	OMB Apportionment schedule providing additional $200 million in advance authority. (Additional $50 million apportioned from previous advance.)

Note: The attachments have been retained in committee files.

Question 14: In his testimony, Mr. Porter stated that 200 people attended a meeting to promote contractor participation in EPA's Superfund program. Please provide to the Subcommittee any written documentation used for general information purposes, and advertising or marketing conducted for this meeting. Provide a list of the attendees and any comments received by EPA from them. Who ran this meeting, where and when did it occur?

Answer: Two meetings were held during the week of April 27, 1987, to discuss the contracting strategy for the remedial program and to describe the provisions of SARA to the contracting community. These meetings were held in Chicago on April 27, 1987, and Philadelphia on May 1, 1987, the Regional cities for the Regions to be supported by the contracts being procured.

EPA formally advertised these meetings in the Commerce Business Daily (CBD), a copy of the notice is attached. In addition, we notified as many of the associations and other groups that publish news letters or magazines directed to the Hazardous Waste and Engineering Community as possible and asked them to notify their members and subscribers. Several individuals indicated they had heard of the meetings through these journals and newsletters.

Attached are attendance lists for the two meetings. There was no charge or formal registration for these meetings. The attendance lists were compiled when we asked the participants to sign in. Based upon the number of people in the room these lists represent a good portion of those present, but not 100%.

Attached is a copy of the material presented at the meeting. This material summarizes the information that was included in the request for proposals (RFP) issued May 8, 1987. The material was not available for distribution at the meeting, but it had been distributed along with the RFP.

During the course of the meeting, well over an hour was devoted to questions from the attendees. There was no transcript taken, however, so we are unable to provide any list of comments.

These meetings were sponsored by the EPA, Office of Emergency and Remedial Response. They were run by staff from the Design and Construction Management Branch, which is responsible for managing the remedial planning contracts. Staff from the Procurement and Contracts Management Division and Office of Waste Programs Enforcement also made presentations related to the contracts. In addition, staff from the Site Policy and Guidance Branch gave a presentation on the provisions of SARA as they are being implemented by EPA.

Question 15: Please provide to the Subcommittee detailed information on the nature and extent of training in contracts and grants administration management which is given to On Scene Coordinators, Regional Project Managers, Projects Officers, etc.

Answer: A comprehensive Project Officer Training Course was developed in the summer of 1982. From 9/1/82 to 5/15/87, 2595 EPA Project Officers throughout the country received this training. It is anticipated that an additional 285 persons will undertake this course by the end of FY 87, and become certified Project Officers, as required by the EPA Contracts Management Manual.

This training resulted from a recognition of the need to provide each Project Officer with a thorough understanding of his/her responsibilities during all phases of the acquisition cycle from pre-award to close-out. Three and one-half days in length, it defines the roles and authorities of other persons in the acquisition process, and equips the Project Officer with specific information on how to perform his duties.

In the Fall of 1985, a companion course, entitled Contract Administration for Project Officers, was developed by a Senior EPA Contracting Officer. Although contract administration is emphasized in the Project Officer's course, it was determined that this subject was of paramount importance and warranted a separate discussion of the issues involved. Additionally, due to the increasing number of contract awards, and the fact that the average contract dollar value has increased dramatically, additional responsibilities have been placed on all Project Officers. This 3-day course was tailored to EPA acquisition procedures and regulations. From 10/1/85 to 5/27/87, a total of 1862 Project Officers received this additional training, and 384 more are scheduled to complete the course by the end of FY 87.

Based on a number of requests from the Program Offices, another course was developed in March 1985 entitled Contract Administration Training for Supervisors. This 1-day presentation highlights the subject areas covered in the 3-day course, and emphasizes the roles of the Project Officers and Work Assignment Managers. To date, 282 supervisors have completed this course, and an additional 214 are expected to receive this training within the next four months.

At present 156 On Scene Coordinators have received training in formal contract management procedures. One-day training courses have been conducted in all 10 Regions.

The matrix below delineates the number of training courses that have been conducted at Headquarters, Regional Offices, and other locations.

The answers to Questions 17 and 18 provide information on grants administration management.

No. of Training Courses Presented to EPA Project Officers

	Project Officer		Contract Administration	
	1986	1987	1986	1987
Washington	14	11	9	6
RTP	3	2	4	3
CINN	2	1	3	2
Region I	2	2	3	1
Region II	3	1	3	2
Region III	2	1	1	2
Region IV	2	1	3	3
Region V	5	2	3	2
Region VI	2	1	3	1
Region VII	2	1	3	0
Region VIII	2	1	1	1
Region IX	2	1	3	1
Region X	2	1	3	1
Additional:				
Ann Arbor, MI		1	2	0
Las Vegas, NV			1	1
Montgomey, AL				1
Corvallis, OR				1
Duluth, Minn.				1
Narragansett, RI				1
Edison, NJ				
TOTAL COURSES	43	27	45	30
TOTAL Number of Persons trained		2595		1862

Question 16: Please provide to the Subcommittee the names of all currently employed On-Scene Coordinators, Regional Project Managers, Project Officers and all other EPA staff responsible for contracts and grants management who have been through the training identified in Question 15, above.

Answer: The attachment listing Regional OSC's and RPM's shows if and when each one has had the training discussed in Question 15.

Question 17: You indicated, in your testimony, that in the near future you intend to provide an additional $230 million in State Cooperative Agreements for Superfund work. As you know, the Inspector General has issued several reports critical of the capabilities of some states to deliver, with efficiency and cost effectiveness, what they have agreed to do. EPA's oversight of State Cooperative Agreements has also been questioned by the IG. You have indicated that EPA is working on systems to improve the States Cooperative Agreements performance.

Question a: The Subcommittee is aware of the Management Assistance Program (MAP). Please fully describe that program, list the States visited thus far, findings, recommendations and programs developed to remedy deficiencies found.

Answer: Description of the program.

When a State elects to manage a remedial response at a site it agrees to oversee the project and to ensure that EPA's general assistance and Superfund program provisions are met. All Superfund cooperative agreements require that States comply with the provisions of 40 CFR Part 33, "Procurement Under Assistance Agreements" when they procure services, supplies, or construction. This regulation provides the minimum procurement standards recipients must follow, and allows recipients to use their own procurement policies and procedures if those policies and procedures comply with the requirements in Part 33. Only two of the eleven recipients we reviewed elected not to follow their own procurement systems. All the rest certified that upon receipt of their Cooperative Agreement that their policies and procedures meet Part 33 requirements.

The main purposes of the management reviews were to:

- o Help the States understand the requirements of Superfund cooperative agreements, and particularly the procurement requirements of Part 33.
- o Assess the States' compliance with EPA's regulations; and
- o Identify methods to expedite procurement of subagreements.

The primary purpose for the MAP program is to provide technical advice and education to States before possible major problems develop. The MAP program was developed because State's were taking what appeared to be a protracted time to procure contractors (average of 18 months for a design contractor) and because we had a concern that the States' procurement systems may not comply with EPA's minimum requirements. The reviews confirmed the lack of adequate State procurement implementation. Our reviews took 2 to 3 days and concentrated on the States' procurement policies and procedures. Two States had not conducted a Superfund procurement before we conducted the review. The others had conducted at least one procurement action.

The MAP reviews are conducted by the Headquarters Grants Administration Division, Headquarters Superfund program staff, and Regional office grants and Superfund staffs.

At the conclusion of each review we met with State officials and told them our review findings. In some cases, EPA approved deviations from its procurement regulation to allow States to use their rules where we identified minor differences (i.e., update prequalified bidders/offerers' list annually rather than every six months). In other cases (e.g., writing procurement procedures, or procedures for bid protests, including all evaluation criteria in their RFP), we identified problems that required States to revise their procedures in order to avoid future audit problems.

After each review, the team prepared a written report, which included recommendations to remedy the deficiences found, and sent it to the Regional Superfund Branch Chief and the Grants Unit Chief. The Regions transmitted the reports to the States and were responsible for follow-up.

States visited.

State programs reviewed were California, Utah, Missouri, Pennsylvania, Texas, New York, New Jersey, Florida, Michigan, Massachusetts, and Washington.

Findings.

- Four States did not have written procurement procedures which were applicable to Superfund procurements, and others did not have written procedures which fully conformed with EPA's regulations. Written policies and procedures are necessary to ensure that procurements are conducted consistently and in compliance with good procurement practices.

  - All States had written procurement procedures applicable when State funds were the only source of money (these procurements were usually conducted by a central procurement office), and many of these States used these procedures when EPA Superfund money was used.

  - In three cases the State Superfund program was not required to use the State's procurement procedures for Federal Superfund procurements, and, therefore, had no written procedures for Superfund procurements. These States had, however, certified their procurement systems as meeting the requirements of Part 33. One of these States had not conducted a procurement action before our review, while the other two had conducted several procurement actions.

- The other States' written procedures did not, to varying degrees, comply with EPA's requirements. Nonconformance with Part 33 ranged from not citing the recent changes in EPA's regulations, to not covering requirements such as cost analysis, changes, claims, Minority Business Enterprise/Women's Business Enterprise/Small Business Enterprise, and bid protests.

- Most States did not include all required clauses in their subagreements. EPA requires that recipients include specific clauses, or their equivalent, in every subagreement. Some of the clauses provide standard language for various subagreement requirements designed to protect the recipient and the Federal government. Others keep subagreement costs reasonable by allowing risk sharing between the recipient and its contractors. Two States' subagreements contained two different clauses on the same subject. This could cause legal problems if issues arise.

- Several States did not have written procedures on how they will handle bidders/offerors protests. Bid protest procedures provide bidders/offerors with a procedure to contest the recipient's conduct of a procurement action. EPA's bid protest appeal procedures provide the bidder/offeror an independent EPA review of the recipient's conduct of procurement actions. Written State bid protest procedures are necessary to inform bidders/offerors of their rights and to avoid time delays when a protest occurs. Some of these States told us they did not have bid protest procedures because they have not had any bid protests. However, these States had conducted few procurement actions, and those they had were usually Architectural/Engineering services which historically have had very few protests. When these States start awarding construction subagreements the number of bid protests is likely to increase.

- Three States used a method to select Architectural/Engineering (A/E) firms which did not comply with EPA's regulation. Most A/E procurements are conducted through the competitive negotiation procurement method. EPA's regulation allows recipients to use one of two types of competitive negotiation. The most common method used for A/E selection is the "optional" method in §33.525. Three States used a method to select A/E's, whereby, the recipient does not receive a site specific proposal from anyone other than the firm selected to do the work. EPA's regulations, on the other hand, require that the recipient evaluate technical proposals, rank the firms based on the proposals, and negotiate with the top ranked firm.

- In most of the subagreement files there was no evidence that the recipient conducted a cost analysis on competitively negotiated procurements. One of the cornerstones of Federal procurement is that the Federal government will pay only allocable, allowable, and reasonable costs. Under EPA's regulation, the recipient is responsible for conducting a cost analysis on every change order and every competitively negotiated procurement over $10,000, in order to determine that the proposed costs are fair and reasonable. Unless the recipient conducts a complete and thorough cost analysis the recipient cannot be sure that the costs are reasonable, and EPA may refuse to share in the costs.

- Five States did not inform potential bidders/offerors of all of the criteria the State would use to evaluate the bids/offers, not did their Invitations for Bids/Requests for Proposals include the relative weight of each criterion. EPA requires that recipients inform potential bidders/offerors of the criteria bids/offers will be evaluated against and to tell biders/offerors of the relative weight of each criterion. These requirements are necessary for two reasons - one, as a matter of equity, to make potential bidders/offerors aware of how they will be evaluated, and two, to forestall the possibility of the evaluators arbitrarily changing evaluation criteria to skew the outcome of the evaluation.

- Two States that used prequalified lists did not comply with EPA's requirements. EPA allows recipients to use prequalified lists provided there is adequate public notice of such a list, the list is updated at least every six months, and the recipient reviews and acts on each request for prequalification made more than 30 days before bid opening or receipt of proposals.

  In both cases the State was not updating the lists every six months, nor allowing potential bidders/offerors to compete on a project unless the bidder/offeror was on the list at the beginning of the year. Since our review, however, we have worked with both States to bring their systems into compliance with our procurement regulation. Not all States use prequalified lists because they do not award enough subagreements in a year's time to warrant the time it takes to develop and maintain a list.

- Two States did not have procurement provisions implementing the Minority Business Enterprise/Women's Business Enterprise/Small Business Enterprise (MBE/WBE/SBE) six affirmative steps. EPA requires that all recipients have MBE/WBE/SBE policies which at a minimum implement the six affirmative steps in §33.240. The six steps are designed to ensure that MBEs/WBEs/SBEs are given the opportunity to compete on EPA projects.

- Two States had an in-State bidders preference in their regulations. EPA considers in-State or local bidders preferences (i.e., giving these bidders an advantage in the bidding process) to be anti-competitive, and prohibits their use. (The two States, however, agreed not to give preference to in-State or local bidders when Federal Superfund monies are involved.)

- One State used a prohibited form of cost reimbursement subagreement. The most common type of cost reimbursement subagreement is a cost plus fixed fee type, where the recipient estimates the total cost for the work and establishes a ceiling the contractor may not exceed without approval from the contracting officer. This type of subagreement provides for a negotiated fee that is fixed at the execution of a subagreement. The fee does not vary with actual cost, but may be adjusted as a result of changes in the work to be performed under the subagreement. One State, however, awarded at least one subagreement in which the fee could vary but could not exceed 10% of the total direct and indirect costs. This arrangement encourages the contractor to increase costs in order to increase the fee.

Recommendations

During our reviews we noted several procurement procedures which should help States reduce the amount of time it takes to conduct a particular procurement action. We encouraged other States to consider using the following and any other procedures to expedite procurements.

o States should limit the length of the offerors proposals.

o States should use pre-qualified lists to expedite procurements.

o States should use level-of-effort subagreements to reduce the number of procurement actions.

o States should use model procurement documents to expedite procurements.

Question b: List all of the States to be visited under the MAPS program in FY 87.

Answer: We have just completed a MAP review in Colorado and have scheduled reviews in Delaware, New Hampshire, and Oklahoma.

Question c: What specific training programs has EPA instituted to provide in-depth grants administration training to Regional project managers?

Answer: We are doing several things to provide grants administration training.

- Superfund Project Officers Assistance Management Training Course.

  The Grants Administration Division, the Financial Management Division, and Superfund are developing a training course for Superfund Project Officers. The 4 day course is aimed at Superfund Project Officers, financial managers, assistance administration staff, and program supervisors and managers who need to know the assistance requirements and procedures for Superfund.

  The course will inform participants of Project Officer duties, how the position functions in the region, and provide skills training through exercises in applying standard operating procedures to Superfund cooperative agreements. It will cover basic requirements for application review and award; procurements under an award; reference materials; and regional implementation procedures. Instructors will be from Headquarters and Regional Grants, Financial, and Superfund offices.

- Procurement under Assistance Training

  The Grants Administration Division in conjunction with the Procurement and Contracts Management Division has developed a Grants Administration Division (GAD) procurement training course for Superfund procurement under assistance to be delivered to Superfund project officers, assistance administration staff, and State staff. The course emphasizes EPA's responsibility and recommended actions for monitoring State procurement practices and places special emphasis on those State which have not self certified. Two courses were conducted in June in Regions IV and VI and at a training workshop in July in Region X. Attendees at these sessions included EPA Program staff, assistance administration staff from all 10 Regions, and representatives from 3 States.

Model Cooperative Agreement

A model Superfund cooperative agreement package is nearing completion. When provided to the Regions it will be useful in assuring each Superfund cooperative agreement satisfies all EPA assistance requirements and that those requirements have been clearly discussed with appropriate State personnel. A component of the model provides the States with a "checklist" to use in preparing an application. Areas are reserved for guidance on the Technical Assistance Grant (TAG) and CORE agreements.

Question 18: It has been suggested by EPA Regional staff that once a state Cooperative Agreement is signed, EPA has little or no control of the process. It is certainly imperative that the states be a full partner in the Superfund process. It may be necessary, however, to provide in-depth assistance to both the EPA Regional staff and to the states to achieve the program's objectives. The existence of a training program does not, in itself, assure success. The Subcommittee is interested in a well thought out management approach to overcome the problems observed by the Inspector General. In answering the following questions, please keep in mind that the Subcommittee desires to receive some reasonable assurance that the Agency is carefully considering how to create and implement an effective Cooperative Agreement program.

Question a: Has EPA been aware of problems in Cooperative Agreements soon enough to provide meaningful assistance?

Answer: In some instances, yes. EPA has provided assistance to States with Superfund cooperative agreements through its Management Assistance Program (MAP) visits. As noted in Question 17, we have found problems mainly in the area of procurement and have provided the States involved with assistance regarding needed corrective measures.

Question b: Have the States been receptive to such assistance, have they resisted or delayed it?

Answer: Almost without qualification, the States involved in the MAP visits have enthusiastically received our assistance.

Question c: Many of the IG's State Cooperative Agreement audits apparently did not find that much EPA assistance was provided. If the answer to 18(a) was, "Yes," please provide specific examples of "meaningful assistance."

Answer: One of the objectives of our MAP reviews is to assess the States' compliance with EPA's regulations. In order to do this, we review each State's procurement system. When we find deficiencies or gaps in a system, we identify such problems for the State and recommend corrective actions. For example, in New York State we found the following deficiencies and recommended corrective actions:

- Failure to document the performance of cost analyses.
- Failure of the RFP to provide the relative weights of evaluation criteria.
- Failure of State contracts to contain certain required clauses while containing clauses improperly drawn.

Similarly, in Missouri we found that:

- The State's system lacked procedures for the procurement of construction contractors.
- The State's system lacked procedures concerning the utilization of small business and women's business enterprises.
- The locus of organizational responsibility within the State government for procurement of construction contractors under Superfund cooperative agreements was unclear.

Question d: In addition to the steps EPA has begun to take, how else can it substantially improve its oversight of State Cooperative Agreements. Please describe in detail.

Answer: A comprehensive management plan has been developed by the Grants Administration Division (GAD). The plan initiates new activities, involving Program and relevant management staff, and builds on activities referred to earlier in this response. Implementation schedules are in place and tracking and internal control systems under development.

Specifically, the plan includes:

(1) MAP Enhancements: A new protocol has been developed for the review which enhances the focus on cost recovery issues and difficulties identified in earlier MAP reviews.

(2) Regional Oversight Reviews: Each Region will participate in reviews conducted by GAD between August 3, 1987 and December 30, 1987. These reviews examine program/management relationships, correlations between MAP and audit findings, recordkeeping, current cooperative agreements, potential problems area, and mutual concerns.

Findings from these reviews will enable GAD to provide each Region with guidance on correcting Region-specific problems, to analyze findings for generic problems and develop solutions to provide to all Regions, as well as a forum for sharing "what is being done right". Extensive followup on implementation of findings and success of the implementation will be institutionalized in GAD, as will the ongoing review process.

(3) Guidance: A review of all assistance management guidance is being conducted and consolidated package developed. This will be maintained current.

(4) Training: Courses are under development or in the planning stage with target dates for development. Among these are:

- Project Officer training scheduled for pilot delivery in early FY 88. The course is designed to enhance Regional staff understanding of Superfund cooperative agreements and their respective management/assistance roles.
- Procurement under Assistance is described in 17c.
- Cooperative Agreement training is planned as a module for inclusion in RPM training courses to enhance the RPMs awareness of the importance of proper implementation of the agreements.
- MAP review training will be developed then given in each Region. Once this skill is provided to all Regions, each will be held accountable for performing a MAP on each of their States. This will assure all Stateswith Superfund cooperative agreements are reviewedand the findings carefully monitored by the Region with whichworking arrangements are in effect. Headquarters will participate in a number of the more difficult reviews and will track findings and implementation. Analysis will be done on the findings to identify common problems and develop solutions.
- Audit for Senior Managers is a course under development which provides Agency Managers with a better understanding of items of sensitivity and ways in which those might be addressed before problems arise.

(5) Audit Procedures: New procedures are in place and others are being developed to track and analyze audit findings. Where common findings occur, steps will be taken to identify the underlying cause and provide corrective/preventive guidance to Regions in working with their States.

The key to the success of this plan is institutionalizing it within the Agency. That is being done through its incorporation in yearly workplans and performance standards, and by making it a living plan which grows and changes with the growth and maturity of the Program

In addition two other efforts are underway. First, emphasis in the proposed revisions to the National Contingency Plan (NCP) will be on improving the Federal/State partnership. EPA will encourage the use of an EPA/State Superfund Memorandum of Agreement (SMOA) to clarify EPA's oversight role in Fund-financed response, State responsibilities, and Federal/State interaction on assistance agreements EPA believes this mechanism will be useful in clarifying a State's understanding of what is required of them as well as in involving States more fully in the response process. Second, EPA is also making funds available to States in FY 88 to improve their Cooperative Agreement management systems. This core funding will enable States to hire or develop the expertise necessary to meet Federal assistance requirements and to manage Cooperative agreements properly.

Question 18 (2nd): As one management tool, EPA tabulates the number of RI/FS's, remedial designs and remedial actions. For those remedial actions already begun and for those planned to be started in FY 87, please provide to the Subcommittee, separated by Fund and enforcement lead projects, the number of those which represent a single site and the number which represent "operable units" of the same project. Please indicate also the total number of "operable units" which when taken together represent a single proposed or final National Priorities List site.

Answer: Attached is a printout from the Superfund Comprehensive Accomplishments Plan which shows all remedial actions that have been started or will be started by September 30, 1987. The printout shows all currently known operable units at each site, planned start and completion dates (year/fiscal quarter) and obligations ($ thousands). The "lead" column identifies the project responsibility as follows:

F — Federal lead
S — State lead (with Trust funds)
FF — Federal facility lead (regular appropriations funds)
RP — Responsible party lead (Federal oversight)
SN -- Responsible party lead (State oversight)

NOTE: The attachment has been retained in committee files.

Question 19: On page 6 of the charts you prepared for the hearing, there are columns entitled, "Potentially Recoverable Universe" and "Sites With Viable PRP's."

a. For these two columns, what is the dollar amount?

b. What is the definition of a site with non-viable PRP's?

   1. What criteria does EPA use to determine that a PRP is non-viable?

   2. Does bankruptcy always constitute non-viability of a PRP?

c. Please provide an in-depth discussion of procedures EPA can utilize to recover from a bankrupt PRP.

   1. Does EPA take steps necessary to establish high priority among creditors of bankrupt PRP's (If so, what are these steps. If not, why not?)

Answer: As indicated in the first column, the Agency had obligated approximately $1.8 billion as of January 1987. The second column includes undistributed costs. These costs include expenditures for Research and Development activities, part of the transfer allocation to other federal agencies and administrative costs in 1981 and 1982. The third column, "Potentially Recoverable Universe" is the difference between the first two columns ($1.6 billion). This column includes direct site costs and indirect costs. The fourth column involves sites with non-viable PRPs, which is estimated at approximately 20 percent of total site costs. The fifth column, "Sites with PRPs", represents the difference between the third and fourth columns.

As a point of clarification, both the "Potentially Recoverable Universe" and the "Sites with Viable PRPs" columns include costs at sites neither listed on the NPL nor the subject of a removal. Some of these costs may not be recoverable. For example, both of these columns include the monies expended for preliminary assessments and site investigation (PA/SI) for sites which have not been listed. (Rough estimations indicate that only one site in four results in response activity beyond the PA/SI). These costs have not been apportioned as indirect costs and may not be recoverable in §107 actions at other listed sites.

Sites with non-viable PRPs include those sites where PRPs can not be identified, did not send hazardous substances to the site or where PRPs are associated with the site but lack substantial financial resources. PRPs are identified pursuant to EPA's Potentially Responsible Party Search Manual. Financial analyses are are conducted, as necessary, by conventional analyses such as review of assets and liabilities.

You ask whether bankruptcy always constitutes non-viability of a PRP. While bankruptcy often constitutes non-viability, the primary criteria are the financial resources of the party and the viability and priority of EPA's claim. If a party has undergone bankruptcy proceedings it is very likely that the party no longer has sufficient resources to completely satisfy a judgment. While bankruptcy does not always constitute non-viability, it would be necessary to examine a number of different factors: 1) what type of discharge of liability the party received in bankruptcy; 2) when EPA's claim arose; and 3) on what basis the party is liable under CERCLA, as a landowner, or as a generator or transporter. In these instances, too, the financial resources of the party must be considered.

To recover from a party who has filed a petition in bankruptcy, EPA must file either a proof of claim or application for reimbursement of administrative expenses. A proof of claim is the usual procedure for gaining reimbursement of an unsecured claim, while an application for administrative expenses is used solely where the Agency can assert that its claim is entitled to administrative priority. The Agency's standard procedure where an argument can be made for administrative priority is to file a proof of claim which asserts administrative priority and in the alternative unsecured status.

Once EPA has filed its proof of claim or application, EPA has a number of different procedural options for resolving its claim with the bankruptcy trustee. These options are detailed in the "Revised Hazardous Waste Bankruptcy Guidance" issued on May 23, 1986 (attached). Briefly, EPA may settle its claim with the trustee in the form of a confession of judgment, a stipulation, or through the reorganization plan if the bankrupt has filed under Chapter 11. If the matter cannot be settled, then EPA can move to withdraw the matter to federal district court to get a full judicial hearing on its claim.

EPA takes steps to establish entitlement to administrative priority in the distribution of the bankrupt's assets. To establish administrative priority, an application for administrative expenses must be filed with the bankruptcy court prior to the bar date as set by the court. If the trustee opposes the EPA's claim for administrative priority, EPA then must brief the matter for resolution by the bankruptcy court.

Question 20: Since becoming aware of the deficiencies cited in the Inspector General's Report on Cost Recovery, please detail those steps which the Agency has taken to alter its PRP search procedures, and its strategy for recovering from PRP's in, or near, bankruptcy.

Answer: This supplements our prior answer by addressing PRP's in or near bankruptcy: To handle notice of bankruptcy filings, the Office of General Counsel has designated an attorney to review all notices received by the Agency and to route them expeditiously to the appropriate regional attorney. In terms of altering strategy, EPA thinks that its strategy has been correct, although implementation has been uneven. For example, the decision cited so prominently by the Inspector General's report, In re T.P. Long, was a ruling produced by aggressive litigation by the regional counsel's office in Region V. To improve implementation of its bankruptcy strategy, the Office of General Counsel, the Office of Enforcement and Compliance Monitoring, and Department of Justice have all assigned an attorney to serve as the lead person on bankruptcy matters. The OECM attorney and DOJ attorney confer regularly on referred cases and cases which may be referred in the future. These attorneys play an important role in insuring that EPA takes consistent positions throughout the country in bankruptcy matters and that settlements of EPA claims are in accord with national policy. Further, these attorneys select those cases best suited for litigating important and precedential issues. Finally, these attorneys have worked with their counterparts in the States in providing support in state litigation whether that be through informal advice or through the filing of amicus briefs.

Question 23: For all sites with viable PRP's, please indicate what type (e.g., removal; RI/FS; remedial design; remedial action; PASI) of work has been commenced or completed?

a. What is the cost of each of the work activities identified above?

Answer: The best measure of sites with viable PRP's is where EPA has negotiated a settlement (Administrative Order on Consent, Consent Agreement, Consent Decree, or Inter-agency Agreement) with the PRP's to perform removal and/or remedial activities. The attached listing entitled "CERCLA Settlements Requiring PRP Cleanup Work" was derived from the Case Management System, and indicates the site name, settlement type and date signed, description of the remedy, and the estimated value of the remedy.

The estimated value of the remedy is based on engineering estimates, and does not represent actual expenditures.

Question 24: The IG has reported that the average time to negotiate a cost recovery is 279 days. Please specify what the Agency plans to do to reduce that time frame? What does the Agency consider to be a reasonable time frame before concluding such negotiations?

Answer: The average cost recovery negotiation time frame of 279 days cited by the IG includes more complex negotiations than just simple cost recovery. In particular, it includes negotiations for the PRPs to perform the RD/RA. It should also be noted that negotiations may continue even after §107 enforcement action has been initiated.

EPA has identified streamlining the settlement process as one of its highest priorities. Interim guidance on improving the settlement process was sent to EPA regional offices on February 12, 1987. This guidance calls for: 1) better EPA preparation for beginning negotiations; 2) the formation of an EPA settlement decision committee to provide timely decisions on overall settlement policy as well as to resolve major site-specific policy issues; and 3) better management of negotiation deadlines.

With regard to reasonable time frames for concluding negotiations, EPA policy is that SARA Section 122 provisions related to negotiations moratoria will be employed. While these moratoria are aimed at negotiations for conduct of response actions, similar approaches for cost recovery will be employed.

Question 26: Of the sites ready for recovery — which EPA's testimony stated has a dollar value of $460 million — only $300 million is reported to be in the "cost recovery instituted or settled" category?

a. Why isn't the remaining $160 million in that same category?

b. When will the remaining $160 million be in that category?

Answer: In EPA's budget are resources for the development of 38 cost recovery referrals for fiscal year 1987. The Agency estimates that the potential cost recovery value of these cases is approximately $42 million. Additional cost recovery actions are being planned for FY 88 and will be planned for FY 89.

The Agency anticipates that some small cost recovery settlements (those less than $500,000) may be handled administratively with the new authority provided in the CERCLA amendments.

Given the available resources for both new litigation, ongoing case support and administrative settlement activity, there may be a delay before actions for the remaining costs which are potentially ready for recovery can be initiated. The smaller and less straight forward actions may be deferred in order to bring larger actions.

Question 27: Under what circumstances would a project not proceed from the category "sites with viable PRP's" to that of "sites ready for recovery"?

a. What are the criteria for moving a site from one category to the other?

b. When will the remaining sites with viable PRP's

1. be ready for recovery?
2. have cost recovery initiated or settled?
3. be actually recovered?

Answer: As briefly explained in answer to Question 19, the column "Sites with Viable PRPs" includes the costs associated with all preliminary site investigation work. Those sites where there is no response activity beyond the preliminary assessment/site investigation (PA/SI) would not proceed to the category "Sites Ready for Recovery". The remaining sites with activity beyond a PA/SI however, may not be filed for cost recovery, if there are substantial evidentiary problems. Evidence linking PRPs to a site may be weak or evidence of hazardous substances at the site may be weak, either of these situations making cost recovery difficult.

The sites with potentially responsible parties will be ready for recovery when either a removal action has been completed or when a remedial action has been initiated. It is EPA's goal, in general, to initiate cost recovery actions within one year after the completion of the removal action or during the later phases of remedial action, even though the statute of limitations in CERCLA as amended, allows for three years from removal completion or six years from physical on site construction of the remedial action. Presently, there is a backlog that we are attempting to address.

Once a cost recovery action is initiated the Agency estimates that it will take two to three years for case resolution.

Question 28: When cost recovery has been awarded by a court or settled

a. What is the amount actually awarded or settled?

b. What is the actual amount cost recovered?

c. If there is a difference between the amount awarded by a court or settled and the amount recovered, explain what factors account for this.

d. When will the remainder be collected?

Answer: Please find attached a printout from the Agency's Financial Management System (FMS) which lists the sites where EPA has reached agreements with PRPs to reimburse the Trust Fund. The "Accounts Rec" column indicates the amount of reimbursement agreed to and the "Collection" column indicates the amount of the reimbursement which has been received. The difference between amounts awarded by a court or settled and the amount recovered can be explained in one of several ways. Often times a settlement and its accompanying payment may be settled out right or over the course of time. For instance, we may settle a case for $10 million dollars and the payment schedule may be deferred for five installments of $2 million per year. The FMS accounts would show only a partial recovery of dollars until the entire payment has been received. In other situations we may receive a judgment for x million dollars but there are no financially viable parties and the Agency never expects any money (there are no other parties to pursue). We have a favorable judgment but no dollars recovered. Payment schedules are negotiated on a case-by-case basis, depending on the amount to be recovered and the financial assets of the settling parties.

NOTE: The attachment has been retained in the committee files.

TESTIMONY OF
JOHN C. MARTIN
INSPECTOR GENERAL
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON SUPERFUND
AND ENVIRONMENTAL OVERSIGHT
OF THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
APRIL 29, 1987

Good morning, Mr. Chairman and members of the Subcommittee. I am pleased to have the opportunity to discuss some of the recent audits that the Office of Inspector General has conducted of the Superfund program. The sense of urgency about cleaning up hazardous waste sites makes Superfund particularly susceptible to waste, fraud and abuse. The Agency must balance public demands on the Superfund program with the need to establish good systems of internal control and adequate accounting mechanisms to ensure the integrity of the program. An expanded cleanup program means the pressure is on to expedite cleanup actions. At the same time, however, EPA must do it efficiently and economically.

ERCS

We issued an audit report last September on EPA's Emergency Response Cleanup Services (ERCS) contracts awarded in 1983 and 1984. Prior to the ERCS contracts, the Agency had issued individual contracts, called Notice-to-Proceed contracts. In audits of these Notice-to-Proceed contracts, we noted that billing rates used by these contractors were not based on actual costs, and there was insufficient documentation for us to evaluate their reasonableness. We were concerned that the negotiation of the fixed rates for the ERCS contracts were based on the billing rates of the Notice-to-Proceed contracts which represented prevailing rates of a new industry where there was little evidence of competition. We initiated the ERCS audit to obtain information that would assist the Agency in designing, and executing future contracts for immediate response cleanups.

We found that the ERCS contracts, with a potential value of $185 million, allowed contractors excessive markups over costs. We use the term markup to mean the difference between estimated actual costs and the rates billed to EPA.

For labor costs, we found markups averaged 40 percent. When overtime rates were billed, markups in some cases were even higher. The markup over cost for a Response Manager for instance, was estimated at 80 percent for one ERCS contractor. Subcontracted labor also had high markups. At one site, EPA paid $20,880 for security guards which cost the ERCS contractor $8,489 -- a markup of 146 percent.

As shown on the chart, we found markups on equipment items ranged from an average of 143 percent on monthly rates to an average of 321 percent on hourly rates. For example, a trash pump was billed to EPA at a rate of $16 an hour, $945 a month. The contractor bought it for $541 and depreciated it for five years. No repair or maintenance costs were recorded for it. The contractor received $4,025 at just one site for use of this pump. Since the pump had an estimated life of five years, the contractor may have received substantial additional amounts for the pump at other sites. In another instance, EPA was charged $58 per day for use of a pickup truck that a subcontractor was leasing for $16 per day. This represents a net markup of 262 percent over actual costs.

A number of problems contributed to the excessive markups. The massive size and stringent response requirements of the ERCS contracts severely limited the number of companies which submitted proposals. The limited number of offerors and their contractual interrelationships, and the use of price analysis (instead of cost analysis) made it difficult for the Agency to obtain reasonable rates. The use of fixed rates for most labor and equipment categories, including subcontracted and rental items, allowed contractors to recover many times their cost for some items.

When EPA negotiated the ERCS contracts it did not effectively analyze the information that was available at the time, or consider problems that had arisen in previous cleanup contracts. Problems, such as, unreasonable fixed rates applied to subcontracted items, and employee overtime and per diem billed but not paid to employees, had been disclosed in prior audit reports. These same problems resurfaced in the ERCS contracts.

Fixed rate contracts are not cost effective unless the fixed rates are reasonable and reflective of the circumstances involved. The factors which limited the ERCS procurement -- restrictions in the RFP and difficult contract specifications -- undoubtedly affected the contract pricing structure and the way contractors conducted their business under the contracts. In addition, the Agency did not adequately monitor the ERCS contracts to assure compliance with contract terms and Federal laws.

In response to our audit report, the Agency has adopted a new contract strategy for the removal program to be implemented over three years. This strategy involves going from four large zone contracts to as many as 25 regional contracts by the end of fiscal 1988, plus a number of competitive procurements for cleanup of individual sites. These contracts will be tailored to different degrees of urgency. The Agency has shifted to rely more on cost reimbursable payment terms and limit the use of fixed rates. It is also relying more on cost analysis, rather than price analysis, to obtain reasonable rates. We believe the Agency is right in continuing to push contractors to develop cost data because recent pre-award audits found instances where there was still inadequate competition to award contracts based on price comparisons. Contractor cost and pricing data did not support the proposals, and contractor accounting systems did not generate valid cost data or support costs under cost-type contracts.

The Agency is taking a number of steps to strengthen contact administration by defining contract requirements more carefully, and including award fee provisions to focus EPA and contractor attention on contract performance. To provide day-to-day oversight and management of the contracts, the Agency is placing contract specialists in the regional offices.

The Agency has laid out a comprehensive plan that represents a total rethinking of the procurement process for cleanup contracts. If the Agency implements all of the inititatives contained in its strategy, we believe the process for procurement of immediate response cleanup contracts will be greatly improved. We will continue to monitor the Agency's implementation of its strategy to evaluate its effectiveness.

Cooperative Agreements

We have conducted two major types of audits of State-lead cleanups under cooperative agreements awarded by EPA. We have reviewed EPA regional oversight of the States, and we have audited States which have claimed costs under specific cooperative agreements.

Regional Management

The first type of audit looks at EPA regional management of Superfund cooperative agreements with States. While the specific problems varied, we have consistently found that the Agency had not adequately monitored the States receiving Superfund cooperative agreements to ensure that Federal requirements are met, and that the objectives of the agreements are achieved in a timely manner.

We found that the EPA project officers lacked adequate training in the area of procurement and contract administration, and did not require the States to take necessary corrective actions for identified State procurement deficiencies. We also found that one Region did not make periodic evaluations of State project activities.

In one Region, we found that the Agency did not deobligate about 3 million dollars awarded to but not needed by a State. We found that EPA project officers did not take effective action to ensure timely completion of remedial investigations and feasibility studies (RI/FS), which were taking more than two years to complete. The Region was also not receiving required State progress reports and was not following up on missing reports. In addition, we found that the Region approved change orders totaling over $1 million for nine feasibility studies with no assurance that cost analyses were performed to evaluate their reasonableness.

One State was not following the approved budgets for the cooperative agreements and was not maintaining adequate time distribution records to charge labor costs to EPA agreements. Additionally, it was charging costs not supported by documentation. For instance, six employees were charging more than 100 percent of the total time they worked to three EPA cooperative agreements. Several of these same employees who were charging over 100 percent of their time to EPA were also responsible for other State programs during the same time period.

The Regions we reviewed responded to our reports with planned corrective actions. For example, one Region is now requiring States to provide a description of the intended use of any obligated balances so the unneeded funds can be deobligated. That Region is also requiring the State to submit cost analysis memorandums for all change orders which exceed $10,000.

We will review subsequent Regional activities to determine if the deficiencies have been successfully corrected.

Cost Audits

In addition to reviewing EPA's regional oversight of State cleanups, we have been performing external audits of specific Superfund cooperative agreements. In fiscal 1986 we issued nine such reports, and we issued six such reports in the first half of fiscal 1987. As this chart shows, we audited $22 million of costs claimed under 15 cooperative agreements. We questioned $1.2 million as being unallowable for Federal reimbursement, and set aside $6.4 million for further Agency review. This illustrates the fact that we had problems with almost one-third of the costs we reviewed.

Some of the deficient areas we identified related to poor documentation of labor, travel and laboratory costs; and the States' accounting systems were often not adequate to record costs by specific site. However, the biggest single problem we encountered was with State procurement systems. Most of the states did not have a written procurement manual which addressed EPA's procurement requirements, and a number of States did not always conduct or document required cost analyses to determine that costs were reasonable. Some States did not adequately document the justification for selection of the procurement method used or evaluate offerors based upon clear criteria outlined in the Request for Proposals. Some States entered into contracts with prohibited cost-plus-percentage-of-cost clauses. Federal regulations prohibit those contracts which add on a fixed percent to direct cost, and thus encourage contractors to maximize, rather than minimize, direct costs.

EPA has recognized State procurement deficiencies as a national problem. It has issued a manual and offered training to State personnel to address the problem. In response to our audit reports, a number of States have prepared procurement manuals addressing EPA requirements and have corrected contract deficiencies. We will conduct follow-up audits in States where we have identified major procurement deficiencies to determine if the States have effectively remedied the problems.

Removal Action Controls

During the past three years, we have conducted unannounced on-site audits of removal actions. These audits determine the adequacy of the controls exercised by the On-Scene Coordinator (OSC). To date, we have issued 14 final reports on such audits covering removals at 18 sites.

We have generally found that OSCs have not exercised adequate controls to ensure that EPA only pays for services it receives. Documentation has generally been incomplete and inadequate, and internally inconsistent in a number of instances. At several sites, we found clearly unallowable charges were billed to EPA and approved by the OSC. For example, at one site we found that a contractor billed 12 people on two days when no work was performed at a site; protective clothing was charged for 15 days during which employees did not work; and equipment was charged when it was not being used.

Partly as a result of our audit reports on removal actions, as well as the ERCS report, the Agency established a Work Group on Management Support for Superfund's On-Scene Coordinators. A final work group report was issued on March 27, 1987. It made a number of recommendations to improve administrative support for OSCs and to institute a formal internal control review program. The recommendations included the establishment of administrative support units for the removal program in regional offices, and expanded training for OSCs in administrative areas. We intend to continue to perform unannounced on-site audits and will be able to evaluate the effectiveness of these initiatives.

Cost Recovery

In September 1986, we issued a report on EPA's efforts to have potential responsible parties clean up hazardous waste sites or pay for the cleanup performed by the Federal government. As this chart shows, overall we found that as of September 30, 1985, EPA had obligated $1.3 billion from the Trust Fund. The Agency had negotiated 84 costs recovery cases totalling $26 million. This resulted in 72 cases being settled for $14.6 million, of which $14 million had been collected.

There has been much discussion between us and the Agency over the appropriate ways of presenting data on the Agency's enforcement program. We recognize that there are different methods of presenting such data. Just last week in response to the Cost Recovery Audit Report, the Agency presented several other ways to evaluate its enforcement activities. One method included identifying the universe of sites potentially ready for cost recovery, and then examining the cost recovery activity initiated against those sites. Another method compared the amount sought by the Agency versus the amount settled with the responsible parties.

These alternative methodologies for measuring the success of the cost recovery program and the dollar values and percentages presented raise a number of questions. We are still in the process of evaluating the Agency's response, but it appears the Agency is viewing its cost recovery activities from a different perspective. In our analysis, we wanted to show the overall impact on the Trust Fund. That is, of the $1.3 billion the Agency obligated, it had actual collections of $14 million, or a cost recovery ratio of 1.1 percent. Unless the Trust Fund is replenished by cost recoveries, the Agency's ability to clean up hazardous waste sites will be diminished.

We found EPA was not aggressively pursuing cost recovery actions against potential responsible parties where funds expended for removal activities were under $200,000. As of September 30, 1985, we found 182 removal actions under $200,000 which totaled over $6 million, where cost recovery actions were not being pursued. According to the Agency, due to resource constraints and the cost of litigation, the Agency policy has been to pursue, on a priority basis, cost recovery for those sites over $200,000. Another factor taken into consideration by the Agency was while enforcement costs are recoverable, enforcement actions whose costs exceed the costs of the response action must be carefully considered.

We agree with the Agency that cost recovery actions are resource intensive and may not always be practical. However, we calculated that potentially over $60 million could be lost to the Trust Fund in the next 20 years if a concerted effort to recover costs for removal actions under $200,000 is not made. Recognizing the intense resource requirements of such litigation, we recommended that the Agency explore alternative methods of pursuing cost recovery actions that would permit recovery while saving resources. Such alternatives might include arbitration, and contracting with private attorneys to handle routine actions. For the last several years the Agency's stated policy has been that it will take action to recover all costs incurred by the Government in Superfund response actions. We believe that all funds recovered are important since they replenish the Trust Fund and may be utilized for future cleanups. Perhaps just as importantly, a vigorous enforcement program can have a deterrent effect by putting potential polluters, large and small, on notice that the Agency is committed to making polluters pay.

While we recognize EPA has been successful in compelling responsible parties to clean up sites through negotiations, we found that EPA did not have a coordinated or systematic approach for tracking negotiations to ensure timely completion. We estimate that 67 percent of the negotiations conducted by the Agency exceeded the Agency's timeframe of 60 days for negotiations. On the average, negotiations lasted 279 days. While we agreed with the Agency that the 60 day cut-off policy was not realistic in some cases, some cut-off period must be established to prevent negotiations from going on endlessly.

We believe that if a settlement cannot be reached in a reasonable amount of time, negotiations should be broken off and cost recovery pursued through administrative and civil actions.

We found EPA did not have a comprehensive management information system to provide good support for Superfund recovery and enforcement actions. At the time of our review, the Agency used several information systems to collect and maintain site-specific enforcement information. Each of these systems served a useful, but particular, management need. No one system provided Agency managers with the data needed to effectively manage and evaluate the Superfund enforcement program. Agency officials were required to use output from various systems and manually search through individual project site files to determine the enforcement status of any given site. EPA has recognized that its current system needs improvement and has underaken action to develop a comprehensive system. We will evaluate this new system as a continuing review of the Agency's cost recovery operations.

Summary

As discussed here today, our audit work has shown that EPA has had some real problems in administering the Superfund program. At the same time, however, the Agency has worked cooperatively with us in developing aggressive plans of action for alleviating the identified problems. While there may occassionally be some disagreement between us and the Agency about the details of any individual audit report, there is maximum cooperation in getting problems corrected. EPA staff, from the Administrator on down, understand and support our role in reviewing program operations and have demonstrated their willingness to work cooperatively with us to obtain needed operational improvements. You can be sure that we will continue to work closely together to make the Superfund program function as effectively, economically, and effectively as possible.

SUPERFUND IMPLEMENTATION

Clean-Up Standards

THURSDAY, JUNE 25, 1987

U.S. Senate,
Committee on Environment and Public Works,
Subcommittee on Superfund and
Environmental Oversight,
Washington, DC.

The subcommittee met at 10:20 a.m. in room SD–406, Dirksen Senate Office Building, Hon. Frank R. Lautenberg presiding.

Present: Senators Lautenberg, Warner, Pressler, Stafford, and Durenberger.

OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator Lautenberg. Good morning. I will call to order the Subcommittee on Superfund and Environmental Oversight. Before we start, I would like to recognize our distinguished colleague and good friend, Senator Stafford, whose interest in the environment is matched by none other. He has had a long career, and a steadfast one, on behalf of a clean environment, reflected in the interest of his constituents. I also want to recognize my other distinguished colleague, Senator Durenberger, who also has pursued with diligence his interest and very effective interest in a better environment.

The EPA, who will soon issue guidelines to implement the Superfund Clean-up Standards Amendment, is doing so without input from the public on an issue that is vitally important to those whose lives are affected by Superfund, national priority list sites. As I understand EPA's proposal, it can be labeled a little short of illegal.

In March, 12 of my colleagues wrote to EPA's Administrator, and we advised him of our expectations. We delineated the difference between your approach and the agency. We asked that EPA reconsider its direction. Mr. Thomas responded in May, and sadly, I have to report the gap between us remains terribly wide.

This Subcommittee's concern was heightened when it was learned that EPA would not consider tough, health-based standards for Superfund groundwater clean-ups which the Congress enacted last year. In dealing with this "how clean is clean" issue, the Congress insisted that the most appropriate standard was to be used.

We think that when it comes to groundwater, which may be used for drinking water, the most appropriate standards are the fully health protective standards of the Safe Drinking Water Act. They are known as maximum contaminant level goals. They have not been limited by cost or technology considerations. And for carcinogens, they are claimed by EPA itself to be at zero risk.

By enacting those standards of Superfund, the Congress said to EPA, "Go as far as you must to protect public health and the environment." In recognizing that in some instances, today's technical reality may preclude the achievement of tough, health-based standards, the Congress provided a waiver provision. If the standards can't be achieved technologically, the Congress told EPA that, "You can utilize the waiver for technical impracticability," and because the Congress is also concerned that the fund is used effectively and wisely, that is, many sites as possible are cleaned up, and that people's health is protected, a fund balancing waiver is provided in the law. It is vitally important that EPA understands this.

Nobody in the Congress, not this Senator, nor, to my knowledge, any other Senator or member of the House, is asking that EPA break the bank over an individual site. What we have said in law is that in selecting a cleanup remedy, EPA is to shoot for the highest goal. That means the toughest health-based standard available.

If, for technical or cost reasons, the remedy can't be achieved, then use the law, write down the reasons why it can't be achieved so that the public understands, and invoke the appropriate waiver. Only in this way, when you shoot for the highest goal, will you land higher than you would otherwise have done.

Instead, EPA has decided that fully health protective standards are simply not appropriate for goundwater cleanup. Rather, a lesser standard, limited by costs of treatment incurred by small, poor water systems, is the basis for EPA's cleanup of Superfund sites.

Well, we have gone around again. In EPA's mind, it comes down to a contest of human health versus cost, and at EPA, I am sorry to say that cost prevails. Let's be clear about what this debate is all about. It is about whether or not EPA will spend its time applying the law rather than spending the time of its top decision makers in trying to thwart the intent of the Congress.

The Congress told EPA to select remedies devoid of cost consideration; once selected, the Agency was advised by law to choose a cost effective situation that achieves the remedy.

If a cost effective solution can't be found, again, a waiver can be invoked. However, in using less protective standards in the first instance, EPA precludes the possibility of considering alternatives that are more protective of health and the environment and also cost effective.

It is beyond question or imagination that the Congress couldn't have adopted the course EPA is intent upon following. We who wrote the Superfund amendments believe that EPA's refusal to consider the stringent health-based standards for groundwater cleanup is a violation not only of the spirit, but of the letter of the law.

I am chagrined by the fact that the Agency charged with protecting human health and the environment could possibly make decisions on aversion of the law which, frankly, doesn't exist. Any time we can move to protect cost effective clean-ups, we are legally and morally obligated to do so, though this Senator disagrees, perhaps vehemently, that EPA really believes the law is ambiguous on this point.

If that is the case, it has a responsibility to look behind the law. What do people expect? Let there be no mistake about it. We have all heard from the mothers, from the children, from the families, from too many people. The people, especially those who live near Superfund sites, will say, in no uncertain terms, "Err on the side of health."

It is a lawyer's argument, a technician's argument that EPA callously puts forth. It is not what the people expected; it is not what the Congress intended. The debate on this subject has gone on largely within EPA itself. The people most affected were not consulted. The Agency is intent on compounding that insensitivity by issuing interim guidance on the clean-up standards issue.

By issuing interim guidance, EPA avoids a formal public comment period. It avoids reviewing the comments received and justifying their acceptance or rejection. To rectify this situation and to let the people speak for themselves, I am asking EPA to withhold issuing its interim guidance. Rather, I am, today, calling upon EPA to issue, instead, proposed regulations. I am further asking that once, having done so, the Agency utilize its Superfund community relations program to contact those most immediately affected, explain the issues to them, and encourage them to make their views known.

I would now like to ask if Senator Stafford has an opening statement.

OPENING REMARKS OF HON. ROBERT T. STAFFORD, U.S. SENATOR FROM THE STATE OF VERMONT

Senator **STAFFORD**. Thank you, Mr. Chairman. I do not have an opening statement, but I will comment that having been associated with Superfund from genesis through celebration of its sixth birthday last year, when we expanded and extended the program, I have a continuing deep interest in the success of the program for the benefit of the American public. I congratulate you, Senator Lautenberg, on your opening statement and holding these hearings.

I will say also that I appreciated your kind words at the outset when Senator Durenberger and I came in here. We probably would not have celebrated the sixth birthday of Superfund as we did had it not been for your efforts and those of Senator Durenberger's and others who allowed us to successfully conclude that part of the program.

So I am here, not as a member of this subcommittee, but as an interested member of the Committee and the welfare of Superfund and in the way that it may be administered by the Environmental Protection Agency. Having said that, I will desist and listen to the witnesses.

Senator **LAUTENBERG**. Thank you very much, Senator Stafford. Senator Durenberger?

OPENING STATEMENT OF HON. DAVE DURENBERGER, U.S. SENATOR FROM THE STATE OF MINNESOTA

Senator DURENBERGER. Mr. Chairman, I thank you for your opening statement. I am going to make a brief opening statement. In part, it is going to enjoin, in general, the chairman's statement, which I strongly support, including the proposal at the end of that statement. I am not a member of this subcommittee either, unfortunately, but I do have a little something to do with both Superfund and the Safe Drinking Water Act, and we are going to hear a great deal this morning about the standards promulgated under the Safe Drinking Water Act.

The witnesses will express their views, and we will express ourselves on the comparative advantages of using either the maximum contaminant level goals, the MCLGs, or the maximum contaminant levels, the MCLs, and that is what we will call them from now on, as cleanup standards under the Superfund program.

We have this discussion this morning because for some contaminants, the MCLGs and the MCLs are set at different levels. It is the difference that I think we know as the source of controversy this morning.

Before we get too far into that discussion, I would like to make a point. There ought not to be a difference between the MCLG and the MCL for many of the contaminants that are of concern. If EPA were, in fact, abiding by the provisions of the recently enacted Safe Drinking Water Act, the controversy would not occur, because there would be only an occasional and small variation between these two levels. The Safe Drinking Water Act required the EPA to establish the MCLG at that concentration where no adverse effect will have happened on human health.

For cancer-causing substances, both the Congress and the EPA agree that that level is zero. In the second step, the Safe Drinking Water Act requires that the MCL be set as close to the MCLG as close as feasible. Feasible has a meaning in the Drinking Water law. It means the lowest concentration that could be achieved, using technology that is available and affordable to large metropolitan water systems.

Today, the Washington Post carries a story reporting that the MCLs for eight substances are about to be published. Five of these substances are volatile organic compounds which are known or suspected human carcinogens. Many of the MCLG substance levels are zero. Feasible technology to remove volatile organics from drinking water supplies is well known and widely available. In fact, it is identified by name in the recent amendments to the Drinking Water law. It is called granular activated carbon, GAC, combined with air pumping.

If you closely study the Drinking Water law, you might think that EPA reviewed the effectiveness of this technology to remove volatile organics and set the MCL for the five carcinogens at a level which reflected the capability of this statutorily defined and feasible technology.

If you thought that, you are wrong. No one could question your legal scholarship, but you wouldn't have reached the right conclusion. GAC, combined with air pumping, can get these contaminants down to very, very low levels in treated water, below 1 part per billion, below the limit of detection. You can't find benzene in drinking water that has been properly treated with a well-maintained GAC system.

If EPA had performed a regulatory analysis of these five contaminants, which the law required, the MCL and MCLG would have been at precisely the same level, and this issue would not be part of the Superfund standards controversy for a hearing this morning.

But that is not what EPA did. What they did, as the chairman has already alluded to, is eyeball the costs and benefits of the standard that are being required by law and decided the costs were too high. MCLs would not be effective in the law of the drinking water office. They simply avoided the law and used their own instincts and appearances to determine the MCL.

The active process is summed up by Joe Paby of the Drinking Water Office, which appears in the Post story. He said, and I quote, "The question is: is it practical to apply technology where there is very little to be removed." He doesn't ask what the law requires, but what is practical, and practical, in this case, means comfortable.

Would life be comfortable for the Drinking Water Office if they actually implemented the law? Apparently not. Running a good drinking water program is a tough job, and maybe it is too tough a job. So instead of following the prescribed course and setting a standard, the Drinking Water Office invented the mumbo-jumbo about absolute quantitation limits and practical quantitation limits and went out and picked a number that was practical or comfortable in their view. Post hoc, they will tell you that the Drinking Water law makes allowances for cases where the contaminant cannot be adequately and consistently measured.

They were simply employing the provision. Such a provision does exist in the law. But it doesn't say that the MCL should be moved up to a level where measurement is easy or practical or comfortable. It says that treatment, granular activated carbon, should be required in lieu of a specific number. If the law were followed and the treatment required, the controversy we examine today, the difference between MCLs and MCLGs, would not exist. You don't have to look behind the law; you don't have to look to the spirit of the law.

Mr. Chairman, in conclusion, I would make one final point about the relationship between the drinking water regulations and Superfund clean-up standards. I am afraid Superfund is not a healthy influence on this process, and it is not just Superfund. All of the Agency is now turning to the Drinking Water Office asking for numbers that can be used in other regulatory programs, RCRA standards, hurdles for pesticides and so forth.

In this environment and in the administration that cares much more about intuitive cost effectiveness than it does about the provisions of the law, extraordinary pressure is put on the Drinking Water Office to set standards that are comfortable, practical, and convenient in the context of other regulatory needs, whatever their relationship to the law and their impact on the public health.

Under this pressure, the practical-minded officials of the drinking water program will move MCLs upward in the risk rate that has been identified by the Agency until all Americans are consistently exposed to carcinogens in their drinking water at levels that are entirely unacceptable to us as individuals.

One in every 10,000 Americans, poisoned by their water supply, is not, in the view of this Senator, an acceptable risk. Mr. Chairman, we must find a way to head off this public health disaster before it occurs. I trust the members of this Committee are dedicated to pursuing this agenda, and I look forward to working with you to assure that both the Superfund program and the standards under the Drinking Water Act provide the public with the health protection they expect and we have mandated in law.

Senator LAUTENBERG. Thank you very much, Senator Durenberger, for an excellent statement of a shared view, and I do want to state to you, both you and Senator Stafford, though not members of this subcommittee, you are permanently invited to come to any of the sessions that we have. We welcome your input and your experience and your knowledge. We are pleased also to welcome now the ranking member of this subcommittee, Senator Warner, and ask, Senator, if you have an opening statement.

Senator WARNER. Mr. Chairman, to expedite the proceedings, I will just include my statement in the record. I am anxious, as you are and others, to hear the witnesses. I do commend you, however, on initiating this set of hearings.

OPENING STATEMENT OF HON. JOHN W. WARNER, U.S. SENATOR FROM THE STATE OF VIRGINIA

Thank you, Mr. Chairman, for scheduling today's hearing.

This hearing will hopefully give us the ability to address one of the most fundamental and important issues facing the Suprefund Program.

I would also like to thank the panel members for taking the time to give us the benefit of their views.

In developing the Superfund Amendments and Reauthorization Act [SARA], Congress recognized the need to require that all remedial actions be protective of human health and the environment, and that those actions attain all applicable or relevant and appropriate requirements.

In addition, the act mandates that these remedial actions be cost-effective.

Mr. Chairman, I do not believe that these two requirements are mutually exclusive.

In one sense, the issue under discussion today concerns the appropriate standard to be used in cleanup actions affecting contaminated groundwater. However, as we proceed, we should keep in mind the need to maintain an appropriate balance between effective congressional oversight and the need to provide the agency with the discretion to manage individual cleanup actions at sites in order to adequately protect the health of our citizens.

Again, thank you, Mr. Chairman for pursuing these matters.

I look forward to hearing from the various witnesses today.

Senator LAUTENBERG. Thank you, sir. We will call now the first witness panel. It is Jacqueline Warren, Kenneth Brown, and Blakeman Early.

This is an oversight hearing, and it is customary to issue an oath, and I would ask you to stand and raise your hand. Do you solemnly swear the testimony you are about to give before this subcommittee is the truth, the whole truth and nothing but the truth, so help you God?

Mr. EARLY. I so swear.

Mr. **Brown**. I do.

Ms. **Warren**. I do.

Senator **Lautenberg**. Please be seated. We will begin with Mr. Brown first, then Miss Warren and Mr. Early.

For general information, we will keep the hearing record open for two weeks from the date of this hearing for any Senator who wants to submit questions, and we would ask you now, Ken Brown, if you would start. Please try to keep your testimony confined to five minutes. We would inform you that any statements, any evidence, any testimony you would like to give that isn't included in your presentation time, we will take for the record.

STATEMENT OF KENNETH BROWN, EXECUTIVE DIRECTOR, NEW JERSEY ENVIRONMENTAL FEDERATION, NEW BRUNSWICK, NJ

Mr. **Brown**. Good morning. Mr. Chairman and other members of the Environment and Public Works Committee. My name is Ken Brown, and I am the Director of the New Jersey Environmental Federation, which is the New Jersey chapter of Clean Water Action projects, a national organization.

The Environmental Federation applauds your continued efforts to tackle the nation's toxic waste crisis. The strong Superfund law that we now have would not have been possible without all of your aggressive leadership and strong support for it. We appreciate the opportunity to testify here today, because we share your deep concern about EPA's implementation of the new Superfund.

As you know, the Environmental Federation is deeply involved in the fight to clean up New Jersey's 100 Superfund sites and the many other toxic dumps that plague our state. Our 30 member groups worked hard for a strong reauthorization of the bill. Moreover, many of the groups that are members of the Federation are engaged in the long, arduous, ongoing fight to clean up the sites in their communities.

Some examples include: The Ocean County Citizens for Clean Water, which are fighting to clean up the site created by the Ciba-Geigy operations illegal burial of over 100,000 drums of toxic waste in Toms River, New Jersey; the PJP Landfill Task Force, which fought for many years to put out a fire in the landfill in Jersey City, which had been burning for more than 30 years; and many other groups across the State which are living with the day-to-day nightmare of toxic waste in their communities.

The reason why our organizations fought so hard for the strong reauthorization was because we found EPA's clean-up program under the original Superfund, as you all did, was totally inadequate. After 5 years, only a handful of sites in the Nation were completely cleaned up, none in New Jersey.

Furthermore, we found that the types of clean-ups being planned for sites in New Jersey and elsewhere were based primarily on methods which leave nearly all of the hazardous waste in the ground: off-site disposal and on-site containment.

Congress clearly recognized that these stop-gap clean-ups will leave communities vulnerable to the threat of exposure for generations to come. We are pleased that the new Superfund corrects the problem and clearly states a preference for permanent solutions to our toxic waste problems, those which reduce the volume, toxicity or mobility of hazardous substances.

Under the new law, EPA is required to use these technologies to the maximum extent practicable. In addition, the law requires that the clean-ups must be protective of human health and the environment and meet appropriate health-based standards of both Federal and State environmental laws.

So far, in New Jersey, we have had no new records of decision issued under the new law. However, we are extremely disturbed by early decisions that EPA has made in other States. Today, we are releasing a report analyzing EPA's clean-up selection for the Ottati and Goss/Great Lakes Container Superfund site in Kingston, New Hampshire, the Agency's first record of decision under the new Superfund program. The report was prepared by Dr. Henry Cole, who is the Research Director of the National Campaign Against Toxic Hazards and the senior scientist for Clean Water Action.

The findings of the report are extremely disturbing. Number one, EPA's clean-up plan for the State fails to meet the permanent treatment and groundwater clean-up requirements of the new law.

Two, the clean-up plan fails to adequately protect public health and the environment.

Three, EPA's proposed plan will leave high levels of PCBs at the site.

Four, EPA rejected a clean-up plan offered by the citizens living near the site which would permanently treat most of the waste of the site and meet the standards of the new Superfund.

I might add that the alternative proposed by the citizens living near the site, in fact, was only slightly more expensive than EPA's proposed alternative.

Five, if the proposed clean-up plan stands uncorrected by EPA or the courts, or Congress, I might add, it would undermine future Superfund clean-ups by setting an extremely bad precedent that could be applied to hundreds of other Superfund sites in New Jersey and across the country.

The Ottati and Goss site, in its current state, represents a serious treat to the environment. For 20 years, an industry was reconditioning drums and disposing drums at the site. The result is dangerous contamination. Five cancer causing chemicals are at the site. There is groundwater there, and it is seriously threatened by the contaminants.

The first problem with EPA's proposed clean-up plan is that it would only incinerate 5,000 cubic yards of PCB-laden soil. The plan would also allow PCB soils with quantities as high as 20 parts per million to remain at the site.

The second problem is that EPA dismissed the Congressional requirement for the clean-up of groundwater that is used or may be use for drinking water. The law clearly states, as both Senator Durenberger, and you, Senator Lautenberg, pointed out, that under the new Superfund site, that, if possible, we must at least attain the MCLGs, as required under the Safe Drinking Water Act. In this case, EPA has used weaker standards without proving that the stronger standards could not be achieved.

From the response of EPA administrator, Lee Thomas, to your letter back in March, Mr. Chairman, it is clear that unless something is done, we can expect the same shoddy enforcement of the new law at sites in New Jersey and elsewhere.

Mr. Thomas' response indicates that the Agency appears to be more interested in cutting costs than in cleaning up and protecting our drinking water. The Kingston area citizens group, which is called WASTE, Incorporated, which live near the site propose an alternative clean-up plan that has a number of strong advantages over EPA's approach. The community-based plan would provide permanent treatment for a much greater, volume of soil; it would destroy nearly all PCBs; and it would clean up groundwater to a cancer risk level that is 100 times lower than EPA's proposed plan.

Moreover, the community plan, unlike EPA's, meets the requirements of the new law. Equally important, the community-backed alternative is cost effective. As Table 4 of our report illustrates, all of the above benefits can be achieved for a total cost that is less than 13 percent higher than EPA's substandard clean-up.

The EPA proposal would cost $14.6 million; the community proposal would cost $18.4 million. The new Superfund clearly indicates that such increases are warranted where they bring about large benefits. This is the first EPA clean-up decision under the new Superfund. As such, the policy choices here will set precedence for EPA decisions at sites across the nation.

If the EPA can so easily ignore the reference goals and standards in this case, they will able to do so at any site they wish to. The provisions required compliance with standards and goals will be sapped of the strength intended by Congress.

What will this mean for the clean-up of the Ciba-Geigy plant's site in Toms River, where we have 100,000 barrels? What will it mean for the clean-up of the Burnt Fly Bog site in Marlborough township, where we have lead and PCBs that are a potential threat to the drinking water supply of Perth Amboy?

What will it mean to the Diamond Alkali plant in Newark, where we have dioxin that is seeping into the Passaic River and contaminating fish in the area? It is important that we correct this effort now, and we applaud all of your efforts to do something.

Finally, I would like to talk a little bit about the technical assistance efforts of the program. The citizens who live near the Ottati and Goss Site have been pleading for the technical assistance funds they are entitled to under the new law. In New Jersey, we have had calls from dozens of community groups asking for our help in obtaining these funds. They will enable citizens to hire their own independent experts to enable them to participate knowledgeably in the important decisions that will affect their sites for generations to come.

Unfortunately, EPA is depriving scores of communities from getting these grants. EPA has finally released its long-heralded advanced notice of proposed rulemaking, but we are now told that the monies won't be available until the fall of 1988.

This is totally unacceptable. First we were told it was going to be the spring of 1987; then the summer of 1987; then the fall of 1987; then it was January of 1988. Now it is the fall of 1988.

The point is that a large number of groups, those living around the worst sites, won't receive any grants prior to clean-up selection. The numbers are sobering. Currently, about 220 records of decisions have been issued. According to EPA sources, another 100 or so will be issued by the end of this fiscal year, and possibly another 100 by September of 1988.

In short, the critical clean-up decisions will be made at more than 200 sites before the funds are available. The technical assistance grants for these sites will be virtually useless after the decisions are made.

In New Jersey, this means that community groups at somewhere between 20 and 30 sites will be deprived of needed funds. There is, however, another way. If EPA is serious about giving citizens an effective voice, they can issue an interim final rule now and begin making the grants available immediately.

In the meantime, they can solicit comments on the rules. Mr. Chairman, and other members of the committee, if EPA is unwilling to provide these critical funds, then Congress needs to act and help us out and do something. What we feel is for EPA, the perception out there in the communities that live near these sites is that EPA doesn't want the communities to have this money so that their decisions are going to be scrutinized by the citizens who have to live with these decisions.

Despite the new law, EPA seems more concerned with holding down costs for the pollutors than in obtaining clean-ups that are effective and permanent. On the other hand, citizens are more enthusiastic, as the example of the Ottati and Goss site shows, about meeting the requirements of the new Superfund than EPA is. It is clear that the citizens and Congress must continue to work together to make sure that EPA follows the law.

Thank you.

Senator LAUTENBERG. Thanks very much, Ken. You have highlighted the problems, and you have also created a new time standard here. I am obliged, by having established the precedent, to give the other witnesses, including EPA, a little more time to make their presentation. I hope my colleagues will indulge, but we will move along. Thank you very much.

Ms. Warren.

STATEMENT OF JACQUELINE WARREN, SENIOR STAFF ATTORNEY NATURAL RESOURCES DEFENSE COUNCIL, NEW YORK, NY

Ms. WARREN. Thank you, Mr. Chairman. I am Jacqueline Warren, and I am an attorney for the National Resources Defense Council. I have worked on the Safe Drinking Water program, really, since before the Safe Drinking Water Act was passed.

I have to say that looking at EPA's implementation over the years, I strongly agree with Senator Durenberger's characterization of that program the day that the Safe Drinking Water Act amendments were passed. He said that EPA's program had a miserable, disturbing and discouraging record. I think that it is continuing at the same pace and with the same characteristics.

Looking at the new Superfund amendments, I think there is really no question that both houses of Congress intended that MCL goals, as a general rule, would be applicable standards for Superfund clean-ups. The use of the words "at a minimum, attain MCL goals," and the preference that is articulated, both in the law and in the legislative history for the use of the strictest standards, such as a stricter state standard, if one exists, further confirms that.

It is particularly discouraging for EPA to pronounce that, as a general rule, it will be MCLs rather than MCL goals which will be applied. The reason I say this is particularly discouraging is because our experience with the MCLs shows us that those are not necessarily protective numbers.

Senator Durenberger has already anticipated a lot of the statements I was going to make. We have commented at great length on EPA's proposals of MCL goals and MCLs. I have brought along three sets of NRDC comments on MCLs which I would like to submit for the record. They go into great detail about the deficiencies we see in terms of the degree of health protection provided by the MCLs.

As yesterday's announcement of the MCLs for volatile organics shows, EPA is heavily considering costs in setting the standards. They are considering how many systems might be covered. They are considering the capabilities of the average laboratory to measure low levels of contaminants, and the result is MCLs which allow very much higher cancer risks than we think the society should be prepared to accept, higher cancer risks than the State of New Jersey's is prepared to have its citizens accept.

The State of New York says it considers a nominal cancer risk to be somewhere in the range of 1 in one million to 1 in one hundred million. By comparison EPA is saying a cancer risk of one in 10,000 is acceptable. In fact, the standard for vinyl chloride, which they established yesterday, which they had proposed at 1 part billion but promulgated at 2 parts per billion, allows an even greater risk. At 1 part per billion, the cancer risk from vinyl chloride in drinking water was 3.3 in 10,000. Presumably, at 2 ppb we have a risk of 6.6 in 10,000.

This is not even a 1 in 10,000 risk; it is actually close to a 1 in 1,000 risk. We think this is an outrageously high cancer risk for EPA to allow in drinking water. In addition, it is based on individual consideration of each chemical alone, although risks occur in the context of exposure to many other carcinogens in the food supply and in drinking water. So the real risk is likely to be significantly higher.

Mr. Cook announced in the press conference that there are only 32 people that may get cancer as a result of the volatile organics standards. I would hope I won't be one of the 32. I think that number has to be taken with a large grain of salt. As Mr. Ruckleshaus, the former Administrator of EPA has said, we wouldn't want to put a man in orbit on the basis of the equations these risk estimates are derived from. I don't think we should be making life and death decisions on the ground on the basis of the same types of risk calculations.

There are other problems, even with the way EPA characterizes whether something poses a cancer risk. Senator Durenberger made reference to the fact that five of the standards published yesterday are for carcinogens. In fact, seven of them are. For two others, p-dichlorobenzene, which is the familiar odor of moth balls, and vinylidene chloride, which is a chemical cousin of chloride, we have evidence that they cause cancer in laboratory animals.

EPA is not treating those chemicals as if they pose a cancer risk to humans. They are treating them only as possible human carcinogens. The Safe Drinking Water Act says maximum contaminant levels should be set to protect against contaminants which may have any effect on health. But the MCLs for p-dichlorobenzene and vinylidene chloride are not protective against cancer risks. EPA has not established an MCL of zero for those contaminants and is basically ignoring the fact that they cause cancer in experimental animals.

I think the worst of the situation is, as Senator Durenberger pointed out, that the technology is readily available today to take those exposure numbers way down below where the MCLs have been set. But these are the numbers that are going to be applied in clean-ups, and these are the numbers that people are going to be exposed to in their drinking water and falsely assured that this is a safe level of risk.

If you don't happen to live in New York or New Jersey, where standards will have to protect against any risk greater than a 1 in one million risk, and will probably be the applicable standards under Superfund as well, EPA's MCLs will be the applicable standards. If you take a look at the MCLs coming down the pike, and the EPA has Federal Register notices out on these others since 1985, you will see about a half dozen for which the MCLs exceed taste and odor thresholds.

For toluene, for example, the MCL will be 2,000 parts per billion. People at cleaned up Superfund sites may find themselves with drinking water that smells of toluene. I think there will be a great hue and cry in a community where the clean-up is left at 2,000 parts per billion because that will be the MCL when it is issued.

I have listed in my testimony a dozen of those contaminants for which the proposed MCLGs (and MCLs) exceed the number at which the State of New York will close a well and about, as I said, half a dozen which exceed the taste and odor thresholds.

Looking at these, and knowing that technology can do a lot better at a very reasonable cost, we do not understand why EPA is setting in these numbers as MCLs, except if they are anticipating what the cost of clean-up is likely to be and how the MCLs are otherwise going to be applied. It is difficult to understand their reasoning otherwise.

The Safe Drinking Water Act is one of the most preventive statutes on the books. It says in the legislative history, clearly, that the Administrator is to err on the side of safety in setting MCLs and MCLGs. If there is conflicting scientific evidence, don't give the chemical the benefit of the doubt; give the public, give the public the benefit of protection against the potential hazard.

That is not what EPA has done in setting its MCLs and MCLGs so far, and the courts cannot be looked to for relief from this problem. They are becoming increasingly deferential to the Agency's interpretations of its governing statutes, and they are requiring that the Congress speak with laser-like clarity in what it intends.

I personally believe that with respect to Section 121 of SARA, you have spoken with laser-like clarity that the MCLG is to be applied rather than the MCL. Possibly, with that, we might be able to get relief from the courts.

I think this is a problem Congress will have to take up again. Only you as an institution have the ability to make EPA comply with what the intent of the law really is.

There are a couple of other points I would like to make before I conclude, with respect to the inadequacies of the MCLs. Even for non-carcinogens, the data base is really quite sparse on many of these chemicals. The State that I live in is New York. I am involved with the drinking water program in the State. They have a rule of thumb that they have now codified into a regulation, which says: We will close a well if the level of organic contamination exceeds 50 parts per billion for any single organic or 100 parts per billion for two or more.

New York has now revised that for volatile organics, which are a separate subset of organic chemicals which are more toxic. For these, New York now says: We are going to close the well at 5 ppb. New York's standard for para-dichlorobenzene is 5 ppb. EPA's is 75 ppb. New York would also close the well at 5 ppb for 1,1,1-trichloroethane. EPA's standard is 200 ppb. With disparities in the standards as great as these, I think people are going to have to rely on the States to protect them, and I think that is really unfortunate.

Thank you.

Senator LAUTENBERG. Thank you very much Miss Warren.

You mentioned that you had items for the record. Of course, we will include them.

Senator LAUTENBERG. Mr. Early.

STATEMENT OF BLAKEMAN EARLY, WASHINGTON REPRESENTATIVE, SIERRA CLUB, WASHINGTON, DC

Mr. EARLY. Good morning, Mr. Chairman and members of the committee. My name is Blakeman Early. I am the Washington Representative of the Sierra Club. I appreciate the opportunity to testify before you today as you continue your oversight of the Superfund program. This committee has taken the lead in supervising the implementation of the Superfund Amendments and Reauthorization Act of 1986, commonly referred to as SARA, and on behalf of the Sierra Club and the entire environmental community, I want to thank you for your excellent work to date. Aggressive and vigilant Congressional oversight is crucial to the Superfund's long-term success, as I believe the testimony you are hearing today will amply demonstrate.

Your subject today is the EPA's compliance with provisions that are at the heart of SARA, the uniform national clean-up standard.

These newly-strengthened standards ensure that $8.5 billion in public trust fund money and billions more in funds from the private sector are spent in a manner that protects human health and the environment. Apart from the size of the fund itself, no issue was of more importance to the environmental community during the four arduous years of debating the reauthorization of the program. The future success of the Superfund depends on how the agency interprets these standards over the next couple of years.

If the agency does not comply with the law in establishing "how clean is clean" at thousands of leaking toxic waste sites across the country, we will not only have wasted billions of dollars and abused the public's trust, we will have stepped on to an inescapable treadmill which will see our great great grandchildren still sitting in rooms like this one belaboring the threat of toxic wastes to their health, their drinking water, and their future.

Unfortunately, the report I bring you today concerning the agency's progress in the 7 months since the Superfund amendments became law is not good news.

In preparation for today's hearing, we have reviewed ten records of decision, commonly referred to as RODs, that EPA has made final since the enactment of the statute. Such documents are the agency's final comprehensive statements describing the remedies that have been selected as national priority list sites. Because the agency has not yet issued any definitive policy statements concerning its interpretation of the Superfund amendments clean-up standard provisions, these ten documents are also the sole means of evaluating EPA's track record to date.

Our review of the ten RODs reveals the disorganized, confused bureaucracy making seat-of-the-pants poorly documented sessions that fail to protect public health and violate the law. Seven years into the program, they have not progressed beyond the ad hoc and inconsistent process that was the hallmark of Superfund's grim first few years.

Most disturbing of all, the new clean-up standards contained in the Superfund amendments are not only being abused; they are being used as window dressing to confuse the public and provide unwarranted reassurance that health is being protected.

Consider the following facts: At the Mid-South Wood Products site in Arkansas, EPA selected a remedy that it estimated would present a future risk of 1 in one million deaths. Then the agency sat down and negotiated their remedy with the chemical companies that are responsible parties at the site. When the two sides got up from the negotiating table, they had settled the fate of uncounted numbers of Arkansas citizens and raised the fatal risks remaining after a clean-up to 1 in 100,000 deaths.

At the Bayou Bonfouca site in Louisiana, EPA decided that following the clean-up, the residue of polynuclear aeromatic hydrocarbons, an extremely toxic and carcinogenic waste, would remain at 1,300 parts per million in the sediment in the bayou and 100 parts per million in the soil at the site.

But at the Newport Dump site in Kentucky, the remedial action selected by the agency will reduce the chemicals in the soil to 1 part per million. The unlucky citizens in Louisiana can envy their counterparts in Kentucky for being the inexpliciable beneficiaries of a bureaucratic roll of the dice.

In the same vein, unlucky citizens living near the West Virginia Ordinance Works in West Virginia will be exposed after cleanup to contamination in fish and game posing a cancer risk of 4 in 100,000 deaths. Their luckier counterparts in Kingston, New Hampshire will risk only 1 in 100,000 deaths following the clean-up of the Ottati and Goss site. Of course, you have heard Mr. Brown's comments on how effective that decision was.

Unfortunately, the citizens living in Bayou Bonfouca and Bayou Sorrel in Louisiana receive even less protection, since the contamination of fish and game was not even studied at those sites. The Superfund amendments clearly requires that clean-ups achieve maximum contaminant level goals when such standards are applicable, relevant and appropriate. None of the ten RODs even considered, much less applied, these standards.

Instead, a handful of the RODs considered the weaker sister of the MCLGs, the the maximum contaminant levels, which lower the protection of human health on the basis of cost to municipal water systems of treating drinking water.

Yet at the New Brighton, Minnesota site, where the only remedy involved treating drinking water, no consideration was given to treating down to the MCLG level for carcinogenic pollutants.

At four of the ten sites reviewed, the final remedy selected by the agency involves containing the wastes on-site with a temporary tank when the site is either subject to seasonal flooding or located on the banks of major rivers. These clean-ups, therefore, amount to little more than leaving huge areas and quantities of toxic sludges, soils and liquids sloshing around in swampy land, waiting to be washed outside their boundaries into contiguous water supplies.

Mr. Chairman, the Congress' goal in passing the Superfund amendments was simple and straightforward. You and the other chief sponsors of the law were determined to guarantee the citizens living around Superfund sites uniform, objective clean-up decisions that adequately protect their health and their environment over the long term.

Accordingly, Superfund amendments require not only that clean-ups meet all applicable, relevant and appropriate health and performance standards in other state and environmental Federal laws, but also that such clean-ups use permanent treatment technologies as the preferred approach. Only by meeting such standards can you promise your constituents that their health is protected, and only by insisting on permanent remedies can you hope to finish the job you have begun.

Tragically, EPA has not heard your message. Seven years ago you were confronted with program administrators who were accused of using Superfund to pay off political favors. Today, you are confronted with administrators who give lip service to protecting public health but, in fact, are willing to make the expedient decisions regarding toxic-laden sites to linger on as threats to public health for decades. The effect of both approaches is the same: a Superfund program that continues to make bad and inconsistent clean-ups the rule and the reality. We hope this committee can help put this program back on track.

Thank you, Mr. Chairman.

Senator LAUTENBERG. Thank very much, Mr. Early. We will include the full text of your statement.

Mr. Brown, has EPA made any attempt, to your knowledge, to speak to the people who live near Superfund sites to explain the issue of health versus cost bases for setting clean-up standards?

Mr. BROWN. To my knowledge, it doesn't appear so. The situation in Ottati and Goss points out that the public took the time to learn about the sites; to learn about the contamination, and many of the situations, the citizens know much more about what is going on at the site than the agencies themselves do.

They brought in technical experts to help them; they came up with a proposed alternative that was more effective in meeting the requirements of the law and only cost a small percentage more in terms of dollars, and it is clear from that situation that EPA paid very little attention to what the public's concerns were and really have more interest in saving dollars than in protecting the drinking water at the site.

Senator LAUTENBERG. Did the people around the Ottati site have to pay for that study?

Mr. BROWN. No. In fact, they had some volunteer assistance, I believe. I am not sure.

Senator LAUTENBERG. New Jersey's drinking water law calls for a minimum of 1 part per million risk factor. EPA is 2 orders of magnitude less stringent under SARA; State standards more stringent than EPA's and must be used as the clean up standard. You will be keeping your eye on that. Is that kind of a critical test of what we are discussing here?

Mr. BROWN. Well, I think it is a critical test. I mean, the State Legislature in New Jersey clearly stated with our Water Quality Testing Act that the State agency must set standards for drinking water which have a one in a million risk.

EPA, as we have heard today, is clearly far below that. Our concern in New Jersey is we don't have those regulations yet on the books, and so in the meantime, what is going to happen with many of these sites? We are hopeful that the State will move quickly and then the State will use that standard as the target in New Jersey.

But I think that is a clear demonstration of the problem that we are facing here.

Senator LAUTENBERG. I will rely on you, Ken, to keep us up to date on standards achievments at New Jersey sites. We will, I am sure, be in touch with you.

Mr. Early, you have identified the lack of uniform guidance from EPA headquarters as a major problem afflicting the Superfund program. You say that in absence of this guidance, EPA regional office personnel are left to make ad hoc, site-by-site decisions that fail to provide uniform, adequate levels of health protection.

What do you think we ought to do to address those concerns?

Mr. EARLY. Well, obviously, the conducting of a vigorous oversight is an important factor. The agency needs to issue regulations as quickly as possible. There is no reason why they can't amend the national contingency plan which they are required to do, of course, ahead of schedule.

What we understand they are going to be doing is issuing guidance which, of course, doesn't get subjected to public review and public discussion. It doesn't allow the members of the public and makes it more difficult for even members of Congress to ensure that the agency is providing the uniform guidance that is in compliance with the law.

Senator LAUTENBERG. You accurately pointed out the amount of work and the amount of effort; Senator Stafford, I don't know what the record is for length of conferences, but we obviously had one of the longest. It was very arduous. We were accussed of trying to micromanage the operation at EPA. Frankly, I am darn glad that we did. I almost feel now that I am sorry we didn't go further, because apparently, either we drew up the language unclearly, or we did not have the agreements that we thought we had when finally that legislation was signed into law.

This debate at this time, very frankly, is distressing and frustrating. There was so much thought given into the design and development of the new Superfund law because of sheer revulsion at the performance under Superfund I, if I can call it that, with the limited number of sites cleaned up at enormous cost.

If we want to talk, Ms. Warren, about cost-based decisions, if we simply divided five sites or six sites, one could argue, into $1.6 million, you would have seen a fair amount of money committed to a clean-up effort. Hopefully, we gained enough experience to say, okay, this next program, we thought would have a rolling start. That was the intention, Senator Stafford, as we started and tried to get renewed in 1986. That didn't happen. But we are at a point now where the debate certainly ought to stop over the technicalities and get on with the task, and that is protecting the public health.

Ms. Warren, before I turn the questioning over to my colleague, you point out, very eloquently, that EPA's next round of decisions of MCLs will fail, in some cases, to achieve the smell and taste criteria, because they have proposed to set a weak standard.

Why do you think that is so?

Ms. WARREN. Why do I think they have done that?

Senator LAUTENBERG. Yes.

Ms. WARREN. I think that they are taking a preventive statute and reading with blinders on a law that says: protect against any adverse effects against health. EPA looks at an incomplete data base, sees no evidence that a chemical has been tested for carcinogenicity, for example, and concludes, therefore, that it is not a carcinogen, I'm not sure that is a legitimate conclusion and I am not sure I would make the same one, especially under a preventive statute. Then they set the level based on whatever the health effects data base indicates, however sparse the data may be.

The fact that those numbers are above levels at which you can smell and taste the chemicals in the water doesn't get factored into the setting of the standard. Again, when New York commented on the proposed MCL for VOCs, they suggested that EPA take into account the inadequacies of the data base by considering whatever health effects information there was, factoring in the inadequacies of the data base, and going down to a level that would also protect against taste and odor, but EPA really hasn't done that.

The agency also seems intent on trying to set MCLs that will be as cheap as possible to comply with. If you look at the figures in the notice today, EPA says it is going to cost a family in a large community $3 a year increased cost to meet the standard; in a medium-sized community, $12 a year; or $41 a year in a small community.

It is not a big Federal spending program. This is an expenditure that is reasonable. The public is already spending between $1 and $2 billion a year in bottled water and home water filter devices. People are worried about the quality of the drinking water. I think we can afford to go a lot further, before even vaguely approaching "breaking the bank," as you mentioned before.

Senator LAUTENBERG. Thank you very much.

Senator Warner.

Senator WARNER. I defer to Senator Stafford. I will follow. Thank you, Mr. Chairman.

Senator STAFFORD. Thank you, Mr. Chairman. Thank you, Senator Warner.

I really am not going to ask questions of this panel. I have known at least two of the three members for some time. I am favorably impressed with them, as always. I will say that what they have said here this morning is a considerable indictment of EPA's enforcement of Superfund, as we passed it. Experience in my own State and a couple of sites there seem to bear out some of the testimony that these witnesses have presented, but I learned long ago in Vermont that it is a mighty thin pancake that doesn't have two sides.

I think I will wait to hear what EPA has to say when those witnesses come to the table.

Senator LAUTENBERG. Thank you very much, Senator Stafford.

Senator Warner.

Senator WARNER. Thank you, Mr. Chairman. I think this panel has stated very clearly the case which requires Congress to address. I would like to know the extent to which you have had an opportunity to study the cost differential here. Would any of you? You touched on it, Ms. Warren. I wonder if anyone else has. Perhaps you would like to elaborate, to give us some idea of what the cost parameters are. Would you like to start?

Mr. BROWN. I spoke briefly before about the Ottati and Goss site, which was in New Hampshire. At that particular site, the alternative proposed by the community residents living near the site that is going to have to live with these toxins and exposure for generations to come was only was $18 million compared to roughly $14 million proposed by EPA, a difference of roughly 12 to 13 percent.

That money is coming from the pollutors who are responsible for creating that problem in the first place. So it is a fairly small cost difference for a much, much greater protection in public health, and the money comes from the people who were responsible for creating the problem in the first place.

Senator WARNER. Ms. Warren.

Ms. WARREN. I would like to add something to what I said. For the volatile organics, which are some of the contaminants in drinking water, many are prevalent at Superfund sites. The agency said that if, instead of taking the numbers that they promulgated yesterday, they were to go down to where best available technology can take them, which is somewhere below 1 part per billion, that 3,800 systems would have to treat their water instead of about 2,000 or 1,500 systems, and that the costs nationwide could be around $1.3 billion.

It is important to remember that despite the total cost nationwide, if you look at it on a per family basis, the figures are still very low numbers—$3 a year, $12 a year, $41 a year. Even if the costs per family double, you are not talking about that much money, individually, which is really where people feel the pinch. The aggregate number doesn't mean much to someone whose individual bill is going up $3.

Also, compared to the figures I just gave, if the public is presently spending between $1 and $2 billion a year for bottled water and home filter water devices, it is indicative of their willingness to pay. Congress has been authorizing the Federal expenditure of $1 billion or more a year for sewage treatment for many, many years. There is no Federal treatment program for drinking water plants. That is something that the customers have to pay for, and that is what those costs represent, the $3, $12, $41. So we are not talking about such a big ticket item here, I don't think.

What you would get for that increased cost is a significant increase in health protection. We already all have a 25 percent chance of getting cancer. One in four people get cancer, just in general. The risks posed by drinking water contaminants are all additive risks on top of that. Of course, some of the risks are already factored into that; we don't really know how much. I don't think that we should be willing to accept any more added risk at all if, in fact, reasonable technology is available to prevent it. I don't see any reason to justify it.

Senator **Warner**. That would be my second question. First, Mr. Early, have you had a chance to look at the cost of that?

Mr. **Early**. I have a couple of responses, Senator. First of all, it is very clear in the beginning of the Superfund program, the cost issue drove the agency decisions. The agency was sitting there with a $1.6 billion fund and hundreds of sites to clean up. It is clear that the financing and where they were going to get the money to accomplish those clean-ups was driving some of these decisions in the direction of a quick and dirty clean-up approach.

Congress stepped in, added $8.6 billion to the fund, and also clarified the law in some regards so that it makes it easier to hold responsible parties truly responsible.

Yet the agency is seemingly still making their decisions worrying about these costs, just as they did back in the early parts of the program.

Senator **Warner**. Let's turn [illegible] the brief time I have left to: Do you feel that there currently is the technical knowledge available to meet the MCLG standards?

Mr. **Early**. Well, the technology is there.

Senator **Warner**. You think so?

Mr. **Early**. Ms. Warren has already, in her testimony, explained that.

Ms. **Warren**. It is absolutely there for organics, and it is there for a lot of other contaminants, and the law provides that if it isn't there, the EPA can grant a waiver. But to set up a system which factors in economics twice, once in setting the MCL and again in figuring out how you are going to carry out the clean up, I think, is really a perversion of what the original intention of the framers of this legislation was.

Mr. **Brown**. I would just like to add that it's very clear in law that if the technology is not there that a waiver kicks in and you do the best you can do. But they are not even getting to the point where they are looking at the technology.

Again, in the New Hampshire site, they chose to meet the lesser, weaker standard without even justifying that or demonstrating or even looking at whether or not it was technically feasible to get the safer standard.

Senator **Warner**. I thank the panel. Mr. Chairman, I ask that the statement by Senator Pressler be included in the record at the appropriate place.

Senator **Lautenberg**. Without objection.

[Senator Pressler's statement follows:]

Opening Statement of Hon. Larry Pressler, U.S. Senator From the State of South Dakota

Mr. **Pressler**. Mr. Chairman I commend you for scheduling these hearings on this important issue. Last year, Congress reauthorized the Superfund program at a greatly expanded level. It is critical that the program be administered properly.

Coming from a state with severe water quality problems I understand the importance of safe good quality drinking water. A large share of South Dakota's drinking water does not meet safe drinking water standards due to naturally occurring causes. In some cases it is not feasible to treat water to zero levels. Several years ago EPA built a water treatment facility in a small rural community in South Dakota. The facility was given to the city, but the city could not afford to run it. Soon the city will receive good quality water from a rural water system. It is important that EPA and other agencies look for the most feasible means to provide people with good quality water. I am concerned that EPA may be forced to expend so many resources in reaching the zero level that cleanup actions on all sites may be delayed.

Mr. Chairman, I look forward to hearing the testimony and discussion on this matter.

Senator **Lautenberg**. Senator Stafford, did you have anything?

Senator **Stafford**. I have no questions.

Senator **Lautenberg**. We have just a couple of things that I wanted to touch base on before we discharge the panel.

Ms. Warren, EPA is aware of New Jersey's and New York's attitude toward drinking water standards. They are more stringent than the agency's. Staff, also, must be aware of the National Academy of Science's carcinogens and food supply study. You have worked with EPA for sometime. Couldn't you help us understand from your perspective why the agency insists on its position in the face of more stringent state centers and studies such as the National Academy?

Ms. **Warren**. That is a hard question to answer. I think, in addition to the cost considerations, which I think were implicit in all of their deliberations, I believe they just think they know best. You don't even have to look at the National Academy; you can look at EPA's own prior decisions in many areas. Over the past 17 years of the agency's existence, they have gone from saying they think any risk greater than 10 to the minus 6 or one in a million is one that ought to be protected against, and then they dropped to 10 to the minus 5. Now it is 10 to the minus 4.

I think, basically, they have lost sight of their mission, which is primarily to protect public health and the environment. They assumed the mantle of more of a neutral arbiter trying to look at the contending parties on each of these issues and come down somewhere in the middle. I don't think that is the way to protect public health. They are going to come on next. I am anixous, as you are, to see what their explanation will be.

Senator **Lautenberg**. They will have a chance at Senator Stafford's thin pancakes.

Ms. **Warren**. This pancake is very thin.

Mr. **Early**. Senator, there is one aspect that hasn't been focused on up to now. As Ms. Warren, in her testimony, indicated, both the State of New Jersey and the State of New York have more stringent requirements than EPA, but 20 states in this country, either by policy or by state law, are not allowed to have more stringent requirements than the Federal requirement. The citizens in those states do not have the opportunity to protect themselves and ask their State agencies to regulate more vigorously than the Federal government.

Senator **Lautenberg**. That provokes the thought of whether or not the citizens in those States really realize what the prohibition means to them.

Mr. **Early**. Precisely.

Senator **Lautenberg**. That exposure given on a personal basis makes a heck of a difference when you otherwise discuss these things in the abstract. It is very easy. I mean 1 in 10,000, 1 in 100,000 or 1 in one million doesn't sound quite so bad unless it is you or your family or your friend.

Mr. Early, none of us want to scare people unnecessarily. Your testimony, however, is very powerful, particularly with regard to the standard set on the region-by-region basis. Is there really more cause for concern if you live near a site in Louisiana or Arkansas than if you live in New Hampshire or Ohio? I guess that is really what you were covering in your earlier comment.

What I think is proposed, this is simply a theoretical argument. Do you want to just review that point for a minute?

Mr. **Early**. Absolutely. I think, particularly in my examination of these records of decisions, that the people in Louisiana are getting a bad deal right now. There has, of course, been for quite awhile a huge outcry that there ought to be more sites from Louisiana on the national priority list. The tragedy is even the sites that are on the national priority list are not being cleaned up adequately in Louisiana, not as well as elsewhere.

The varying emphases on different policies as the decisions are being made in one part of the country versus another translates into different levels of protection for people living in different parts of the country. That is unfortunate.

Senator **Lautenberg**. Thanks, Mr. Early.

Senator Durenberger, while we have the panel here, do you have a question?

Senator **Durenberger**. Thank you; two of Mr. Early. You mentioned the Brighton site in your testimony, which has been a great frustration to all of us in the Minnesota delegation over the years, it is a federally-owned facility until the recent amendments. There has been difficulty to get help from the Superfund. But the city of Brighton did take steps to protect its water supply, and as you just indicated, I think, St. Anthony recently got authorization for a treatment system.

I take it that your testimony is to the effect that this treatment system does not afford adequate health protection; is that the gist of your testimony?

Mr. **Early**. That is correct.

Senator **Durenberger**. Do you happen to know what role the State of Minnesota played in the selection of this particular remedy? Is there any evidence that the State of Minnesota opposed this system?

Mr. **Early**. I am not familiar. I know that they were consulted, and as you well know, the States normally sign off on all records of decision. I know they signed off on this record of decision, as well.

The unfortunate aspect of that particular decision is here you have, right on the question: Are we going to achieve MCLGs or MCLs using a carbon filtration system?

They have the opportunity to make that decision. They didn't even consider meeting MCLGs. MCLs was plugged in, and that was the end of that.

Senator **Durenberger**. Ms. Warren, yesterday some of us on this committee put in a bill which tries to deal with the risk problem that we talked about today. It is a bill to prevent pesticide contamination of groundwater.

That bill requires that MCLGs be used as a standard and allows MCLs to be used as a standard in certain cases, but only when the MCL represents a risk that is no greater than 1 in one million.

We do that in hopes of reversing the pressures for high-risk standards, which I identified at the end of my statement. I wonder what you think of that proposal.

Ms. **Warren**. Well, as a general matter, I would like to see the maximum allowable risk be some number that is even more protective than that. But ideally, I would like to say, "no risk greater than 1 in 240 million, which is the whole U.S. population."

But the way EPA has been going, in allowing the risk level, what they call, "acceptable risk level" to get higher and higher and higher, I think that it is important to put some sort of a floor on that and establish a risk beyond which EPA cannot set a standard that would allow it.

The problem with just referencing MCLGs, is that the contaminants are not all carcinogens, or we don't know whether they are. For many pesticides, the MCLG and the MCL are quite high numbers, 680 ppb or 300 ppb. Using either the MCLG or the MCL effectively is going to allow the contamination to get that high, or some percentage of it to be there before anything is done to abate it.

There is a separate argument underway about whether we ought to be doing something to keep these substances from getting into the water in the first place, rather than negotiating about what level of poison to have in our drinking water, which is what we are really talking about. But having said that, I would like to see some brakes put on EPA's discretion to allow the population to be exposed to high levels of toxic contaminants in drinking water.

Senator **Durenberger**. We are trying, and I take it you will be helpful to us in that area.

Ms. **Warren**. I think that we will be. NRDC, in general, has wanted the most protective approach possible to be adopted by the agencies and to be in legislation. We have generally not wanted to enshrine a particular number, because it takes on a life of its own.

We don't believe that 10 to the minus six is really a safe level because there are hundreds of carcinogens out there. For every ten that you are exposed to at 10 to the minus 6, your real risk is 10 to the minus 5. For every 20 at that risk level, you are down to a real risk of 10 to the minus four. It is the aggregate exposure that counts, but to bear that in mind in standardsetting is difficult. Each standard is being set on a chemical-by-chemical basis, as if your exposure were the same as the laboratory animals, which is exposure only to a single contaminant and nothing else. But that is not the case with humans, who have multiple exposures.

Mr. EARLY. That last point, Senator, I think is very important, that you also focus on how the risks are calculated. This is something of a black art, in my opinion. If you don't have language which really helps in the manner in which the risks are calculated, depending upon what assumptions you plug in, you can manipulate that number.

Even if you were to plug in a specific number in the law, and you don't address the manner in which that number is calculated. You really haven't hemmed the agency in accurately.

Senator DURENBERGER. Thank you.

Senator LAUTENBERG. Thanks very much, Senator Durenberger. Thank you, members of the panel, for your testimony. We will keep the record open for questions to be submitted to you. We would ask your prompt response to that. I thank you for the effort and the excellent testimony that you have presented. Thank you very much.

Mr. BROWN. Thank you.

Senator LAUTENBERG. The next panel please come forward.

As we do with oversight hearings, I would ask you to stand, please, and take the oath. Raise your right hands, please. Do you solemnly swear that the statements, the testimony you are going to give before this committee is the truth, the whole truth, and nothing but the truth, so help you God.

Mr. LONGEST. I do.

Dr. PORTER. Yes, I do.

Mr. BLAKE. I do.

Mr. COOK. I do.

Senator LAUTENBERG. Thank you. Please be seated.

We welcome you, Dr. Porter, and your colleagues. This is not intended to attack the efforts that you personally have made on behalf of a cleaner environment. We know that your heart is in the right place, and we do have a question of a difference of view. I want to take this opportunity to say to you and your colleagues that this Senator believes in the matter of the selection of cleanup standards, that you are violating the law, or if not the law, certainly the spirit of the law. I obviously don't think that you would agree.

However, like it or no, the Congress did tell you to use tough health-based standards as the remedies to get at the issue that has apparently caused you the most concern: cost. You were provided with technical and cost-based waivers. To repeat what I said before, none of us here want to break the bank of Superfund or insist that you do. We expect you to set stringent standards in the first instance, as the law anticipates.

If the cost of achieving the remedy is astronomical or the technology isn't there, use the waiver. The responsibility is ours; we wrote the law. Don't try to change it without coming to the Congress to request a change. Documents which you provided the subcommittee indicate clearly that the top agency decision-makers spend a lot of time figuring out how to get around the law.

In none of these documents is health or the law sufficiently addressed. Rather, we see an agency trying to pose things just right to bolster a defense of your position. We see agency staff talking about how to pitch your position We see what looks like an agency official trying to distance himself from the issue until he has to sign a memo. We see an enforcement official pushing the argument of "impossibility" as a legal defense when, in fact, nothing was impossible.

What we are asking is that you look at the law and apply it as it was intended and that you appreciate what the American people expect of you. The concern here is that the attitude displayed by the agency on this issue will, in fact, affect your implementation of Superfund, in general. I don't think that is what you want; it is certainly not what we want.

I would ask you to make your statement. We will certainly be fair with the time. We will set the clock.

STATEMENT OF DR. J. WINSTON PORTER, ASSISTANT ADMINISTRATOR FOR SOLID WASTE AND EMERGENCY RESPONSE ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY FRANK BLAKE, OFFICE OF GENERAL COUNSEL, ENVIRONMENTAL PROTECTION AGENCY; MICHAEL COOK, DIRECTOR, OFFICE OF DRINKING WATER, ENVIRONMENTAL PROTECTION AGENCY; AND HENRY L. LONGEST, II, DIRECTOR, OFFICE OF EMERGENCY AND REMEDIAL RESPONSE, ENVIRONMENTAL PROTECTION AGENCY

Dr. PORTER. Fine. Thank you, Mr. Chairman. I have with me today Frank Blake, General Counsel at EPA to my left; to my extreme left, Mike Cook, Director of the Office of Drinking Water, and on my right, Henry Longest, the Director of the Office of Emergency and Remedial Response.

What I would like to do is submit my full testimony for the record and summarize in just a few brief remarks some of the key features of my testimony. What I want to do today is obviously focus on section 121.

Senator LAUTENBERG. Excuse me one second. We do have copies.

Senator WARNER. I thank the chairman.

Senator LAUTENBERG. Win, sorry.

Dr. PORTER. Today I would like to focus on section 121, as you requested, of the Superfund law entitled Clean-Up Standards. As you know, section 121 covers two major areas: General rules for remedy selection and the degree of clean-up, the latter being the subject for most of the dialogue so far this morning.

I will discuss both of these, because they tie together. I think we have to realize there are many factors considered in a Superfund remedy selection, so I want to touch on a number of factors. I will spend most of the time, however, on the degree of clean-up because I think that is what is foremost on your mind.

First, I will discuss selection of remedy. There is rather detailed guidance in section 121 on the factors to use in remedy selection. As you know, the bottom line is, and I quote, "Select a remedy that is protective of human health and the environment which is cost effective and that utilizes permanent solutions and alternative treatment technologies or resource recovery to the maximum extent practicable."

There are a number of other factors, of course, mentioned in that section. The section makes reference to reduction in toxicity, mobility and volume. It mentions that offset disposal without treatment is the least preferred option.

There are a number of factors listed in a subset under A through G of Section 121, which include the long-term uncertainty associated with land disposal, the goals, objectives, and requirements of the Solid Waste Disposal Act, long-term maintenance costs and a number of others.

There are a number of factors referenced. My point in mentioning these factors is that many technical, environmental and cost factors go into a selection of remedy. I will discuss that in greater detail later.

Now, with regard to the degree of clean-up, the MCL/MCLG issue primarily, we have spent a great deal of time in the Agency, Lee Thomas, me and others, since January to focus hard on this issue. We looked at the use of MCL's and MCLG's with primary focus on Superfund, and also in the context of corrective action under RCRA.

This would lead one to make a determination regarding RCRA and Superfund sites because many sites can be covered under either law. Subsequently, sites may require RCRA-type clean-up, or Superfund type clean-up. We want to take all factors into consideration. We are also interested in FIFRA and TSCA and the Safe Drinking Water Act and other statutes.

The Agency has spent a great deal of time debating the MCL/MCLG issue and the Subcommittee has documentation that shows some of that debate. There were a multitude of opinions at the Agency on what should be done. The bottom line, decided on by Administrator, Lee Thomas, at least to this point, is that the degree of clean-up obviously is a minimum. We have to protect human health and the environment. That may have to be accomplished by site-by-site decisions.

Work is underway at about 540 Superfund sites now. Each site requires a very tough decision as to what the remedy should be. I am personally handling two or three sites myself where I have not delegated the remedy selection to the region, but because of the precedential nature or key policy issues, have kept it at my level.

These include Times Beach, Love Canal, and a couple of others. I am making the remedy selection myself. So I am getting personal experience regarding the factors that must be considered for Superfund clean-up.

Section 121, again, coming back to the degree of clean-up, talks about Federal and State standards that must be met, requirements for qualitative limitations which are really applicable or relevant and appropriate requirements under the circumstances of the release, "ARARs," as we have dubbed them.

The section also indicates, as you are well aware, that it requires us to attain maximum contaminant level goals, MCLGs, under the

Safe Drinking Water Act, where these are "relevant and appropriate under the circumstances of the release."

I wanted to stress that section 121 specifically discusses issues relevant and appropriate to the circumstances of the release. MCLGs are health-based goals in which no adverse health effects are to accrue with a margin of safety. They are developed under the Safe Drinking Water Act. MCLs, on the other hand, are legally applicable limits, set as close to MCLGs as feasible, a very important point.

Most MCLs equal MCLGs. Most of the MCLs being set under the Safe Drinking Water Act will equal the MCLG. If we shoot for the MCL, we will be simultaneously shooting for the MCLG. Where they are not equal, generally, we are talking about carcinogens, where, as we stated earlier, EPA, in agreement with Congress, will set the MCLG at zero.

From the standpoint of what we know and don't know about carcinogens, we decided to be totally safe with a margin of safety; that number will be set at zero. Part of the dilemma accrued to us over this issue centered on whether we shoot for zeros, which is, as chemical engineers know, impossible to obtain in the real world. If we wanted to use activated carbon to do it, it would call for an untold number of carbon plants to reach zero. This would result in an infinite cost.

Lee Thomas questioned whether, as a general matter, we should always shoot for zero for carcinogens and then spend a great deal of time proving we couldn't accomplish a zero goal. As a general matter, he has decided not to do that.

Let me reiterate our position on the MCL/MCLG issue. What Lee has decided for this program, as well as others, is that as a general matter, MCLs, as stated in the Safe Drinking Water Act, pursuant to Congress' intent, will generally be applicable, as a relevant and appropriate clean-up level for groundwater that may be used for drinking.

First, let me state again, most MCLs equal MCLGs, so that issue is moot. The Second issue I want to stress, is: We do consider mobile contaminants. In some cases, we may use the MCLG, or shoot for it, anyway, where we have multiple contaminants. We are concerned about multiple pathways. We will be using MCLGs, or trying to, in some cases.

EPA also believes that MCLs are fully protective and, in fact, will be used as the drinking water standard for 200 million people in this country. If the Congress has a problem with the Safe Drinking Water Act in the sense of those numbers not being protective, that obviously needs to be debated and debated hard, Lee Thomas's intent, I am sure, is that MCL's be protective numbers. That is absolutely his intent, because we are telling 200 million people that water at those levels is safe to drink. So it seems a little funny, in a sense, to tell 200 million people, "You can drink this water" and then come to five people at a Superfund site and say, "You can't. You need lower levels."

I want to also point out that Congress has considered MCLs, not MCLGs, to be the appropriate clean-up level in RCRA. Since we conduct clean-up programs under RCRA, we, in fact, will be using

MCLs as background as the corrective action standard we are shooting for.

Since I run both the RCRA and Superfund programs, I am obviously very concerned that we do not have sort of a Cadillac approach under one statute and some other approach at another. I would add, parenthetically, at Federal facilities both programs will be applicable at a site, RCRA and Superfund. So I'm very concerned that the RCRA and Superfund programs be consistent.

In summary, Mr. Chairman, obviously, I think we have a reasonable approach. We still have case-by-case decisions. Lee Thomas and I agree where there is a question of a remedy not being protective that remedy would have to be argued on a case-by-case, site-by-site basis.

There are at least a dozen factors that must be taken into account. We try to listen very carefully to a community. One of the first questions I ask of any remedy is: What did the community think? What did the State think? The States do sign off on our remedies. So there are many factors considered in clean-up decisions.

I would like to close by saying that I am trying to move the program. I am trying to get decisions made and clean-ups completed.

While we need to have these debates, to ensure that we are moving, roughly, in the same direction, there are many factors to be considered in these clean-ups. I want to get the program moving rather than spend all of our time debating where you have for example, several thousands parts per million at a site, whether we should shoot for 3 parts per billion or zero, when, in fact, we can't get to zero anyway.

I think we should keep in mind the overarching goal is to get the program moving, to get those 540 sites cleaned up and others. The bottom line is to protect human health and the environment. That, Mr. Chairman, is my statement, and we would be happy to answer your questions.

Senator **Lautenberg**. Thank you very much, Dr. Porter.

I think the debate really doesn't center around whether or not you can achieve a zero part per billion standard, you are obliged to do whatever you can to achieve the most stringent level, which we believe is the MCLGs, and not to have the matter decided in a meeting at EPA or a discussion between a couple of the senior people at EPA and exchange of memos, but rather to try and achieve that standard.

There are the waiver opportunities, as you very well know, and we seem to be entering in a debate that has been a continuum here. We are not getting the opportunity appropriately for the community groups or communities to challenge a decision by EPA. We have the technical assistance grants. That was a very hard fought over part of the Superfund law.

You wrote to me saying that the grants wouldn't be operative until as late as January of 1988. There was a lot going on then. Over a year of that program will have passed before we pay out one dollar of grant money.

How do you justify that? We asked for it when SARA was signed into law. Why should it take so long to move this thing along, to get it into the hands of the people who have the right and want to challenge the decision?

Dr. **Porter**. Mr. Chairman, may I respond to that?

Senator **Lautenberg**. Please.

Dr. **Porter**. I am very concerned about that. First, the law requires rulemaking, and so we have to go through a formal rulemaking process in order to get the regulations out. We are doing that the fastest way we can. We have published an interim final rule in the Federal Register. The interim final rule will receive public comment for a 45-day period.

As soon as that 45-day period is over, we are going to move the rule as fast as we can. I am going to keep pushing. I'm not satisfied with that time frame. I am going to keep pushing. Maybe we can beat it a little bit. As you know, people want to comment on the rules to the Federal Government. In fact, I suspect we may even get requests for extending the time period.

So we are moving as fast as we can, and we will try to do everything we can to speed up the process. The law said to do rulemaking; we are doing the rulemaking as fast as we can.

Senator **Lautenberg**. EPA has moved fairly rapidly on other complex regulations and policy. It came up with a groundwater cleanup standard, even though it is a flawed one. You decided you can put an interim regulation into effect and modify that based on public comment.

Dr. **Porter**. That is exactly what we are doing, Mr. Chairman. We are going to be doing an interim rule. We have gone out with advanced notice of proposed rulemaking as a surrogate for getting at least some comment.

We had a lot of interest in terms of the sort of process states should go through to apply for technical assistance grants. One thing Lee Thomas has also expressed, and he told me this personally, is that he doesn't want fraud, waste, and abuse. We need to have a system in place where people are required to be accountable when they apply for these grants. The Agency was going to spend about $12 million this next fiscal year on technical assistance grants programs, and we didn't want to calculate the cost of the programs on the back of an envelope; we wanted to have something formal.

Senator **Lautenberg**. I assume we will provide you with appropriate stationery so you don't have to do that. We even provided you with computers.

Ken, do you want to comment?

Mr. **Brown**. I would say, again, it is totally unacceptable. As I pointed out, we keep hearing the deadline pushed back, number one.

Number two, there is simply no reason why they can't issue an interim final rule now, get the money on the streets, do some experimentation. We know this is an innovative program. Let's learn from some grants that we get the money out there, and then base the final rule on both the comments and on real, live experience with these grants.

So the community is out there. The perception is we work with many groups in New Jersey and across the country, and the perception out there is that EPA is being penny wise and pound foolish, number one, and number two, that they don't want the citizens to have this money and to scrutinize the quality of their work.

Senator LAUTENBERG. I get lots of requests and lots of complaints from people who say, listen, Senator, you worked hard to get these funds available to us; and I would have to tell you, it really is hard to figure out why a relatively small part of the program can't get on stream as opposed to going through a process that elongates it and, frankly, I think, prevents it from being put into place.

I would urge you to move this thing along as rapidly as you can. If we can do something on an interim basis, I am asking you now to do that.

Dr. PORTER. We will look at that, Senator. (See p. 483.)

Senator LAUTENBERG. Does the agency ever negotiate the level of cleanup at Superfund sites as opposed to the percent of costs to be paid with potentially responsible parties?

Dr. PORTER. Would you repeat the question, Senator?

Senator LAUTENBERG. Yes. Does the agency ever negotiate the level of the standard for cleanup at a Superfund site as opposed to the percentage of costs to be paid with the potentially responsible party? Do you engage a potentially responsible party in a discussion of how far you intend to go to clean up as opposed to the percentage of cost that might be involved?

Dr. PORTER. We certainly engage the potential responsible parties along with the rest of the public on the types of remedies. Depending on the way the study is done, for example, sometimes, the PRPs do the study with our oversight. Sometimes the Agency does the study. Sometimes the states do the study.

So certainly, there is dialogue on that. I wouldn't call it negotiation, per se, but there is certainly technical dialogue on how to proceed with the remedy. These is no question about that.

Senator LAUTENBERG. There is some language on page 58 of the Mid South Chemical report, the decision ARA states the physical negotiation with RPRs. The level of health protection afforded by the remedy dropped from 1 in one million parts to 1 in 100,000. Are you familiar with that?

Dr. PORTER. No, I'm not, but I'll take a look at it.

Senator LAUTENBERG. We will pass it and give you a chance.

Dr. PORTER. Could you tell me where you were reading, again, Senator? It is on page 58?

Senator LAUTENBERG. The bottom heading, I think it is. We will pass it for now and let one of your people look at it. We will get back to it.

Dr. PORTER. Okay.

Senator LAUTENBERG. Just to set the record straight on another point, RCRA doesn't give you the right to use MCLs. And neither can you make choices between RCRA and Superfund.

I think what you are supposed to do is to try to meet the standards in each of these cases, and my preference is that you meet the most stringent. If that is a problem, then send it back to us and let us do something to clean up the intent. But the intent, one succeeded the other. One had a different standard, and we don't think that you ought to be making decisions based on, perhaps, the easier or the lesser of the standards, but, rather, to try to meet the standards under each of the laws. You have two laws to obey.

Dr. PORTER. Well, Senator, under subpart F of the regulations that implemented RCRA, the concept of MCL is discussed. Subpart F regulations were sent out for comment, and have since become our regulation. We use MCLs in corrective action decisions under RCRA

What I was trying to allude to is that we have many sites around the country where RCRA would be applicable if the site doesn't score quite high enough to be on the Superfund list. Or perhaps even if it does, you can handle it through some RCRA authority. This is one of the key objectives in the RCRA and Superfund Program and we certainly need to discuss this if you are troubled by it. As a general matter, for example we could have two sites, side-by-side, one RCRA and one Superfund, and there may be very little difference in the extent of contamination. In fact, the RCRA site could be worse than the Superfund site, it's just that sometimes we can handle it more expeditiously under corrective action, 3004(u) under RCRA.

If we are going to handle it under RCRA we don't think it is fair to people living next to a RCRA site to use a lesser standard or vice versa. We are trying to make clean-up standards in both programs fairly uniform. We are not trying to shop around for the least stringent.

Senator LAUTENBERG. My time is up, but I want to get back to that.

Senator Stafford.

Senator STAFFORD. Thank you, Mr. Chairman. First of all, I will say to Dr. Porter that I have a lengthy question I would like to have answered in writing. I won't attempt to deliver it here, and I will ask you to refer it to whichever of your colleagues should take jurisdiction over it.

Then the only question I have really, Dr. Porter, I will address to you, and that is: As I listened to the testimony of the three witnesses on the panel ahead of this panel, it seemed to me, looking at some of the RODs in Mr. Early's testimony, that there was a wide discrepancy in the levels of clean-up obtained in various parts of the country, and that certainly, that it would seem fairest that the level of clean-up established and obtained should be consistent throughout the Nation. We shouldn't have a much dirtier result left, in say, the western State than in the eastern State, and I wondered what your comment would be on that.

Dr. PORTER. Senator Stafford, I certainly agree, as general matter, that we want to have as uniform a clean-up as possible. This is very difficult to deal with in abstract. I don't know what went on in all those RODs. There are things like permanent remedies, treatment to the maximum extent possible; reduction of toxic mobility and volume; community input, state input, et cetera.

I have seen at least 25 or 30 Superfund sites since I have had this job; no two are anywhere near the same. One is a pipe coming out of a hill in Colorado putting acid mine drainage water in a stream. One is a 27-square mile lead smelter. One is a municipal landfill.

It is very difficult to just say, "We are going to have the same number picking one chemical at those two sites."

So when I hear those kind of statements, I think you have to look at the total remedy and the total thought process. Certainly, as a general matter, the bottom line is to protect human health and environment. Reasonable people are going to differ sometimes on how everything should be applied. For example, the permanent remedy or a very clear remedy, so to speak, in some cases, which we are supposed to give great deference to in the law, may be incineration. Many times, a community says, "We don't want incinerators. We are worried about air emissions," et cetera.

So we must take that into account. It is not an easy issue, Senator.

Senator **Stafford**. I realize that. There was a variation of parts per million of several hundred in several instances. I think the Nation would be happier and I would be more comfortable, personally, in the final result if each dump site clean-up came as near to being consistent with the rest of the country as possible.

Dr. **Porter**. I agree, Senator, and I will take a look at that.

Senator **Stafford**. Thank you.

Thank you, Mr. Chairman.

Senator **Lautenberg**. Senator Durenberger.

Senator **Durenberger**. Mr. Chairman, I regret I have to go to a conference this noon on retirement benefits. I will rush through a couple of questions. If you will keep your answers short, I have a whole set of them, as you can imagine, that we will have to get some response in writing.

First, Mr. Porter, let me ask you whether your view was sought by the Administrator before he made a choice between MCLs and MCLGs as the clean-up standard, and then what did you recommend to him?

Dr. **Porter**. Well, certainly, he sought my view, Senator, and many other people's views; I'm sure several dozen, perhaps many more than that. We had many meetings with Lee on this subject. My view was not fixed; it was evolving like many others when we began to debate this issue.

I am wearing two hats here. I want to obey the law, and I think we have done that. I am also interested in moving forward on clean-ups. I certainly agree with what Lee Thomas decided. If the MCL is the legally applicable standard for drinking water, I think that is what the RCRA ans Superfund program should use, without polluting drinking water.

Sometimes we are not. We are dealing with other effects on a case-by-case basis with these other numbers. But I would agree with that. I also, frankly, don't want to spend a lot of time at sites trying to reach numbers such as zero, which one can't reach, and then explaining why you couldn't reach them. As an engineer and practitioner, I was happy in one sense that we were dealing with numbers which we thought we had some chance of reaching and are protective. As I say, that's the way I feel, and that was my position.

Senator **Durenberger**. I hear that. I am just curious as to whether you persuaded him or he persuaded you.

Dr. **Porter**. Lee Thomas is not the shy, retiring type.

Senator **Durenberger**. Right; you don't seem to be, either. That is why I asked the question.

Dr. **Porter**. I certainly don't think I persuaded him one way or the other. I certainly think I had a strong influence. I think other people also had a strong influence from all ranges.

I was trying to lend my perspective as Assistant Administrator for the RCRA/Superfund program and give my view on the issue. But he also sought other people's views on other statutes. I don't think it was a question of one convincing the other.

Senator **Durenberger**. I want to try to explore the differences between us a little bit and then use an example, because you made some reference to plumes before. It strikes me that there are three approaches that we on the committee might try to take if you were going to change your mind on MCLG versus MCL: We could try and convince you that MCLGs were the legal starting point. I think we sent you a letter already which wasn't, apparently, convincing.

Secondly, we could try and convince you that starting with MCLs is not good policy. You don't agree with that, even though we are trying to do a little convincing here this morning.

The third thing we could try and do is to convince you that following the policy course that you have selected would get results that, in practice, you either would or wouldn't or shouldn't support.

Let me try one of these. Suppose a benzene plume was moving toward the well field that supplied the drinking water for the city of Miami, and the only contaminant was benzene. Let us suppose that the edge of the plume reaches the well field; the concentration of benzene will be 4 parts per billion, which is less than the MCL being promulgated, but more than the 1 in one million risk level which could have been prescribed.

Now, further let us suppose that an entirely feasible treatment system can be employed to prevent benzene from reaching the well field. We could simply put pumps on the edge of the existing field to prevent it from reaching the well field; pump the water up or dump it somewhere. We are not asking you to clean the plume; just keep it from moving, which is very do-able.

Under those circumstances, would you recommend installing the pumps to keep the plume from reaching the drinking water supplies for this very large city? What do you think the people of Miami would want you to do? Would the Superfund policy that the agency has selected and which says that MCLs are the relevant number and appropriate policy come to the same conclusion, and under the Superfund decisions you are describing today, wouldn't that plume just keep moving?

Dr. **Porter**. Is this a multiple choice question?

Senator **Durenberger**. No. You can answer all four of them; that is a multiple question.

Dr. **Porter**. Senator, every time I have used the term MCL, I have tried to say "as a general matter," and I have caveated a number of ways. I don't think we would look on that as a black and white situation. I hope this isn't a real case, because a decision has already been made.

But I think you have got to look at the whole law. You must determine: Are you doing a permanent remedy? You have to look at, first, are you protecting human health and the environment? Are you doing something in reference to human health? Are you doing something practicable? Are you doing something cost effective?

I don't know what the citizens' rationale would be. I think, there would be a case where you would want to pump and treat, pull the plume backwards, so to speak, and pump and treat the goundwater. We do that a lot through carbon plants or other technology and reinject the goundwater.

There are a number of ways you might want to consider technically. Without, again, dealing with the factors on the site, it is hard to know precisely what you would do.

Senator DURENBERGER. I wonder if there isn't some value, because since we sound negative, as the chairman said, we are trying to be positive about this, but we all have the same goals and objectives. I wonder if there might not be some value if, at this point in the record, besides this example, maybe we could come up with some others and just ask you in consultation with whoever else, to try to respond or to look at the way this example tries to look at it. In the meantime, I have another question.

Do you know of any sites where it is technically possible to reach the MCL and technically impossible to reach the MCLG?

Dr. PORTER. Well, I think it is technically impossible to reach the MCLG whenever it is zero.

Senator DURENBERGER. But is that your response?

Dr. PORTER. It depends on how you determine zero. If someone says, zero is eight decimal places under 1, then perhaps you could reach it. If zero is 25 zeros—in other words it would be more difficult to achieve. You have to define zero. If you take zero as absolutely zero, as a chemical engineer, I can tell you that it is very difficult to achieve zero without an infinitely tall carbon column or an infinitely large incinerator or other technology. You have to say, "I don't mean zero; I mean eight zeros and a 1 or six zeros and a one or nine zeros and a 1.

But you can't get to absolute zero in the engineering world without an infinitely large reactor or infinitely large carbon column.

If you say, 'I don't really mean zero, I mean .000001," then I can achieve that, and that is what an MCL is. In fact, an MCL is about eight or nine zeros and a 1. They are usually parts per billion. So you have eight or nine zeros and a 1. That is, actually, pretty close to zero.

Senator DURENBERGER. There aren't any MCLs or MCLGs for a lot of the contaminants which are of concern in the Superfund program. How will you select a standard for a groundwater contaminant in the Superfund program when there is no MCL?

Mr. PORTER. Senator, we will have to do different things depending on what data we have available. Many compounds have reference doses, which are basic information on how toxic the compound is. We then use that to develop a risk range, usually 10 to minus 4 or 7. We then look at other factors to decide on the remedy.

Basically, as engineers, we have to come up with a number. We can't design equipment for a remedy if we don't have numbers. We have to do the best we can, if there is a compound for which you don't have an MCL, to develop a number. We think that is critical. Sometimes, we may say that particular compound is not critical because we know, in going after another compound, through experience that we will get some compounds in the process or if it's not controlling or limiting it.

Senator **Durenberger**. Have you testified as to what your opinion is on the risk range that is acceptable for such decisions or what EPA has come up with?

Dr. **Porter**. Yes. We typically operate in a risk range, of 10 to the minus 4 or 10 to the minus 7, and we look at other factors.

I might say, very quickly, some comment was made this morning drawing great distinctions between 10 to the minus 5 and 10 to the minus 6. I am not a scientist, but my understanding is we don't have that kind of accuracy for carcinogens and other compounds to say something will result in precisely 10 to the minus 5 as opposed to 10 to the minus 6.

We are dealing with ranges here, and uncertainty, but we think the range of about 10 to the minus 6, which we use as a starting point, is a very protective range. We think people can debate that, but in the cancer context, for example, taking Miss Warren's numbers, if you take 300,000 people out of an area where you get cancer, you are talking 3,000 and 1. If you are talking 10 to the minus 7, you are talking about 10.1 that would get cancer. We think that is a fairly small risk if you talk about other things.

The last thing I want to say is that there are other risks. If we say we are hellbent to get 10 to the minus 6, and we are going to put in the world's largest carbon plant you have to consider the risk of the carbon plant. You must take into account the risk to the truck drivers bringing the carbon back and forth. That risk must be much higher than 10 to the minus 8.

Senator **Durenberger**. Can I ask you about 10 to the minus 4? If it is your view that a 10 to the minus 4 risk would be acceptable, if we are talking about my Miami example or a very large city, if 10 to the minus 4 is preventable and there isn't some trade-off, as occurs with THMs, would you say 10 to the minus 4 is acceptable for a large city?

Dr. **Porter**. No. As a general matter, I don't want to get too much into debate about large cities and small cities because that is a no win situation.

Senator **Durenberger**. I want to take you to where you wanted to go.

Dr. **Porter**. Ten to the minus 4 is a level you must look hard at. I do not like to be in that range if I can avoid it. As you say, there are other; factors, particularly for things you can do that are terribly difficult. You would try to move to the other end of the range a little bit.

Senator **Durenberger**. I want to try to get into small cities a little bit. Obviously, I have the impression that you will accept one standard for big cities with lots of folks and probably let us in the country sort of slip by.

Dr. **Porter**. No, I don't think that is it at all, Senator. We worry about exposure. Again, the reason I stress these are site specific decisions, is that we do need to think about exposure.

For example, there is a farmer taking water from a well near a site, and we think there is a problem. The first thing we may do is put the farmer on bottled water or give him an alternative water supply while we resolve the problem. We have done a lot of that.

Senator **Durenberger**. Mr. Chairman, I am going to have to submit the rest of my questions. I appreciate it very much.

Senator **Lautenberg**. Thank you very much, Senator Durenberger.

Dr. **Porter**. Thank you.

Senator **Lautenberg**. Win, where in RCRA do you think the authority exists that permits you to use a less protective standard for a RCRA action than for a Superfund clean-up?

Dr. **Porter**. Let me comment on that and Frank may want to comment on it, too.

I don't think you can find that kind of explicit authority. We have developed rules which people have known about and have had the opportunity to comment on. Apparently, there was nothing done in the 1984 amendments to change this. What we are saying is that the MCL is at the level we use in general for a rule-making process.

Senator **Lautenberg**. So that is a decision that you are making in EPA, and you are not saying you are compelled to, by law, to use—

Dr. **Porter**. No.

Senator **Lautenberg**. Well, even if you believe that that is the level, we have clean water, clean air, safe drinking water that include different standards.

Is it your view that you ought to go to the least compelling standard or the weaker standard?

Dr. **Porter**. No, not at all, Senator, and I think, as I indicated, we had this dialogue within EPA. What Lee Thomas tried to do, is look across all the statutes. I think the key things we are trying to accomplish are two fold:

One, be sure we are being protective, and number two, be as consistent as possible so we don't have anomalies where people, side-by-side, depending on whether they are covered by one law or the other, get different degrees of protection. We are certainly not shopping for the most stringent, or the least stringent.

Senator **Lautenberg**. It is reassuring to hear that, because I can tell you what I gleaned from it, and that is that when you use the reference, the cost base to the MCLs, when you talk about the contiguous size and all that, the agency sounds to me like it is just reluctant to do what the law and the Superfund would like it to do.

According to the testimony submitted by the Sierra Club, EPA selected remedies which provide for significantly different levels of clean-up for the same chemical at Superfund sites.

SARA requires that the same uniform national health standards apply to all such situations unless meeting such standards is technically impracticable or astronomically expensive.

What have you done to ensure that the levels of clean-up of the same chemical at different Superfund sites are consistent or are explained by such factors as technical impracticability or excessive expense?

Dr. **Porter**. Senator, we are doing several things. One of the things we are doing right now with the records of decision is we are trying to subject them to headquarters review as much as possible until we provide additional guidance.

But we have also tried to tell people and have told people about the kind of factors to consider. In that case, let me stress that you have to look at all the facts, because people are trying to respond to items such as permanent remedies.

It may be permanent given one set of facts, or given a totally different kind of site, where the remedies selected to be permanent, maximized treatment for example, result in a remedy that doesn't look too much like a remedy somewhere else. Maybe, for example, an incinerator is a permanent remedy whereas in another place, it is pumping and treating groundwater.

When you try to determine, given all the factors in the ground, what a selected remedy did to every chemical; it is not going to be identical at each and every site.

It is just very difficult to say: I did one kind of remedy at this 20-acre site and the result should be the same at this 50-acre site. From the standpoint of a chemical engineer, being protective, but otherwise looking at all the factors, and making sure every chemical is treated the same way, would be a miracle if you could accomplish it.

You try to be protective which may end in may a range of results. You may have a range of chemicals at one site and by incineration, you achieve 10 to the minus 8. That is good. That doesn't necessarily mean that same chemical would get to 10 to the minus 8 where they are treating groundwater or solidifying sludges or using some other kind of technology.

Senator **Lautenberg**. The Sierra Club named five sites where the remedy selected involved leaving the wastes on site, capping some of the areas when the site itself is located in areas which are frequently flooded and are on the shores of major lakes and rivers, their testimony compares this type of remedy to stepping into a swimming pool with an umbrella on your head.

How do you respond to the charges that on-site contaminant remedies selected by the agency don't address the basic source of contamination of the site and will only ensure that it remains a problem for the years ahead?

Dr. **Porter**. Well, Mr. Chairman, again, you have to look at the facts at the site. We have a number of situations where containment is going to make some sense. For example, what we tend to do at these sites, frequently is treatment where you have a concentrated material that you can get your hands on, you are going to treat it.

Where you have acres and acres of very dilute dirt, you may decide not to dig it up and treat it, because there are environmental impacts in doing that, not to mention the cost effectiveness and other factors.

It is hard to react to that in the abstract, I will take a look at those remedies, where the capping et cetra has been done in such a way that there won't be flooding and leaching because obviously, if that is happening, it is not protective.

Senator **Lautenberg**. Mr. Early, do you want to comment on Dr. Porter's response?

Mr. **Early**. Well, in the case, for instance, of Bayou Sorell, I have talked to citizens in Louisiana who have seen this site in six or seven feet of water. It seems inconceivable to me that you can leave any significant amount of contamination at a site. The experience is frequent flooding.

The flooding, the water, is moving up from underneath the site as well as down from above the site, and I don't understand how it is possible to properly contain contaminants under those circumstances.

Senator LAUTENBERG. Dr. Porter, do you feel comfortable with the way that site has been treated?

Mr. PORTER. I do from what I know. I will certainly take a look at it. We are using clay caps, liners and other measures at the site. But I would have to take a look at it to see.

I would be interested to see what the State had to say, because they have to sign off on these measures. I will take a look at where we are on that. I will see if it is the best.

Senator LAUTENBERG. We have to continue to look at these things. There are enough challenges, enough questions asked about the measures, and if we are going to try to discuss this on a case-by-case basis, neither one of us will survive the normal life expectancy which is forecast for us.

Of course, we don't want that shortened by poor drinking water supplies. We have to reach a more consistent understanding of what it is that we intended when we wrote Superfund, and we are going to continue to press until we get a commitment from your agency that these sites are going to be examined, that community groups are going to have the chance to get their input in there, that we are not looking at cost-based opportunities, but, rather, trying to achieve the most stringent standard that there is, and if you can't, then you have to come up to us and say: We are asking for a waiver on these sites.

We don't want to go through the 1 through 900 or whatever the number is. We want to hear from you as to any of those that are on the calendar for examination that are going to require a waiver.

You are "Mr. Superfund" of EPA. I am a Senator who, like my colleagues, meets with families who live near the Superfund sites. Many of these people are appropriately worried, and some of them are fearful, particularly about their health and the health of their families.

In light of the testimony that this subcommittee has received today, let me ask you: How would you have us explain to people around these different sites that the level at which their health is going to be protected depends very much on where they happen to live?

Should they feel better if they lived in Region II and worry if they live in another region? That is what I think we are hearing from you today.

Dr. PORTER. No, not at all, Senator. One thing I have said in these programs is I want to deal with these as real sites with real names. I am personally briefed on sites. We have to treat them on a case-by-case basis. I will say this: I do not think that everybody living next to a site is going to agree with every remedy unless it all disappears and goes to another state.

There is real dialogue from the community and others, and I have been to a lot of public hearings. I have been to the Lapari site I have been to many others. I have spent until two and three in the morning talking to people.

There is a great deal of dialogue on these remedies. It would be misleading to say we can do something from Washington to make this all easy. If I come out with a different number and a different reason, it would be difficult.

I am involved in dialogue on the Love Canal site and others on how we will proceed. There are as many objections and people as there are in Love Canal. So it's not easy. I think Senator Durenberger made an excellent suggestion. We don't want you and I to debate these or others on case-by-case basis.

I think it would be better if Lee Thomas, I and others talked through some remedies, the time we spent and the input we got. We have a very active community input program.

We receive lots of input. Input from some sites is more emotional than at others. We get a great deal of input. They are tough calls. If I could leave you with a point to remember: don't think I or someone smarter than I can look at this number or that number for a particularly site and say everybody would agree and there would be a decision on the remedy. They are not easy decisions; they are tough decisions.

Senator LAUTENBERG. They are not easy decisions. We are not asking for a rose garden, because we are not going to get them with these sites. The fact is that there is a law which you are compelled and Lee Thomas and everybody else over there is compelled to obey. It was very carefully drawn, and now we are still debating, not only what is the law, but what was the intent. I can tell you what the intent was. We agree, we all sat there; you were there, and that is to achieve the best possible health standards, health-based standard that we can. That is the objective.

Ms. Warren, when she testified, she followed the Safe Drinking Water program fairly accurately. She told this subcommittee that you, in fact, have the technology to achieve both stringent health-based standards and to get to the very low limits of the technology.

Your testimony takes a different view. Is she wrong?

Dr. PORTER. I think, as I said, where the MCL equals the MCLG there is no debate. A, we are shooting for it, and B, we can make it. I guess perhaps where there is debate is whether we can get to zero.

I say it is very difficult, if not impossible, in the technical sense, without infinite money to get to zero.

Senator LAUTENBERG. What do you think, Ms. Warren?

Ms. WARREN. They have the technology to get way below where they are going. We are not saying they have to get to zero; it is not possible to do that, but EPA says that alpha beta carbon for vinyl chloride, they can achieve 99.9 percent removal. They set the MCL at 1 and then applied, if they apply technology to to a level of 1, they could get down to a tenth of a part per million. They could get a lot lower than where they are going.

They still have laboratory capabilities. To set a standard that is not going to even drive the lab technologies to get better—we surveyed a group of labs who said they could get to 1. EPA said they can't.

Five is the best they can do, so they set the numbers based on a higher number. For vinyl chloride, they set it at 2, but for the rest of the MCLs, they set it at 5.

Dr. PORTER. Could I have Mike Cook comment on that?

Senator LAUTENBERG. Sure.

Mr. COOK. Let me comment generally, and then specifically. We have set the level at 5 for the large majority of these carcinogens that were announced yesterday after looking at a large number of good laboratories and how well they can perform across the country.

We feel that it is critical to be able to quantify at whatever our MCL is in good laboratories to determine whether or not a system is in compliance. If a good laboratory cannot quantify at that level, you don't know whether or not they are in compliance, and you end up with data that you cannot trust.

We then took a hard look at vinyl chloride, which is a special case, and found that the level at which good laboratories can quantify vinyl chloride, in fact, is around 10 or 15 parts per billion.

The risk at that level is on the order of 10 to the minus 3; that is, one in 1,000, and we said that that is an unacceptable risk. So we set the actual level an order of magnitude more stringent than what good laboratories typically can do, and we have a very good record on this from laboratories that are working on it and said that we are going to make a special effort with those laboratories, an extraordinary effort to make it so that they actually can quantify at this lower level in order to get within a risk range which is acceptable to the agency.

Now, let me comment on two other things. First of all, the granulated activated carbon is not reliable for removal of vinyl chloride. In fact, the best available technology that we recommended for vinyl chloride is aeration, and you can get fairly high removal levels in that case.

Senator LAUTENBERG. How high?

Mr. COOK. It depends on the size of the tower and the amount of air you blow through. As Win said, if you have an infinite tower with an infinite amount of air, you can reach zero.

Senator LAUTENBERG. We are talking about those applications that can perform the functions.

Mr. COOK. We are talking about an application that can achieve a high level if you have a big enough unit involved.

On the cost picture, Ms. Warren has testified that the costs for small communities are $41 by her estimate. That is not my estimate. Our estimate is for communities serving between 25 and 500 people, which are the vast majority of communities that will have to put in treatment, the costs will average $91 per year per household and that, in fact, in the smaller communities, that is, in the smaller part of this range, down to $25 to $100, the costs will be considerably higher.

These are incremental costs that come on top of whatever is already being paid. In practice, these were not considerations that affected the standards for the most part. The principal considerations that we took into account in studying these standards were a combination of falling within this risk range which drove it to a very stringent, more stringent level for vinyl chloride, and the concern over what good laboratories can do across the country.

Senator **Lautenberg**. Mr. Cook, you use the term practicable quantity limits. Does the law require you to use that when you set standards?

Mr. **Cook**. What the law says is that we should place the MCL as close as feasible to the MCLG, taking into account such factors as technology and cost. In this case, this is one type of technology.

Senator **Lautenberg**. Do you think that the answer is no? Miss Warren, have you studied this closely enough?

Ms. **Warren**. The law says taking and applying the best available treatment technology, taking costs into consideration. They are not required, they are not required to take anything like practicable quantifications, as we read the law. The law says if you can't practically measure, if the technology isn't available to measure, then you should use a treatment technique which would be to prescribe technology rather than setting a number, which is instead of setting an MCL.

As long as I have the floor for a minute, I would like to say, I would like to put one other item into the record, which is EPA's proposal on volatile organic chemicals in which they said they can achieve 99.9 percent achievement for vinyl chloride. You asked the question, "How much can you achieve? " It wasn't really answered. They have said 99.9, and up to 99 percent for the rest of the VOCs.

Senator **Lautenberg**. That is from EPA?

Ms. **Warren**. It is from a Federal register notice proposing numbers for volatile organic chemicals. (See p. 476.)

Mr. **Cook**. There is no conflict with my testimony. What I said is that if you have the appropriate sized tower and the amount of air blowing through there.

Senator **Lautenberg**. Does that say that in that register notice?

Ms. **Warren**. No.

Senator **Lautenberg**. Does it say they have to have a tower up there four miles?

Ms. **Warren**. It says, "These technologies are considered best technology generally available for determination of the MCLs."

Senator **Lautenberg**. I want to give the opportunity to my colleague, Senator Warner, who sat patiently, to ask his questions.

Senator **Warner**. I shall be very brief. Mr. Chairman, thank you.

There is a question of whether or not the law is being followed here. I have followed the discussion back and forth, and I suppose my first question would be: Do you think there is further legislation required for any clarification?

Dr. **Porter**. I don't personally, Senator. I think the term "relevant and appropriate" is a good term. It gives us some flexibility in applying both state and Federal standards where they are relevant and appropriate.

Senator **Warner**. There answer is no, in your judgment?

Dr. **Porter**. The answer is no.

Senator **Warren**. Why wouldn't you go through a formal rulemaking in order to put the MCL standard out and thereby have the benefit of the public comment instead of through the guidance?

Dr. **Porter**. You mean in the Superfund context, because we do go through rulemaking to get MCLs out as part of the Safe Drinking Water Act. On the Superfund cleanup standards and criteria, we will be doing rulemaking through the National Contingency plan. We are supposed to get that out by 1988. We will be putting this out for public comment.

Senator WARNER. Have you had adequate opportunity today to consider the cost considerations?

Dr. PORTER. I think so, Senator. I think the cost consideration has been somewhat overblown. I think the toughest things in these cleanup decisions are all the factors you have to consider in Superfund, and frankly, the cost is not that critical in most cases.

Senator WARNER. I thank the chair.

Senator LAUTENBERG. Thank you, Senator Warner.

Mr. Porter, we are going to close, but I just want to say that you are aware from my opening statement that I am requesting EPA withhold the issuance of its applicable and relevant and appropriate standards interim guidance. Rather, I am requesting that you propose a rule, instead; I am asking that you take pains to explain to the people who are living and working around Superfund sites what the issues are and what the stakes are. I am asking that you encourage them to make their thoughts known through the public comment process. Only in this way will they believe and will I believe that they have a real say in their futures. (See correspondence, p. 485.)

As part of that, I would also ask you, now, to move the process along for getting those technical assistance grants out there, because very often, people who live within these sites know only one approach, and that is fear and write to your Congressman or Senator or mayor or what-have-you, as opposed to having the enormous advantage that you have with the size of your agency and the number of skilled people that you have working with you to either make the argument or do the job to give them the opportunity to search out for information that they don't have so readily available.

It is an essential factor. That is why it was included as a relatively hard-fought part of the law, even though we are not talking about significant measures of costs overall.

It is not going to be allowed. We are talking about $50,000? Is that it?

Dr. PORTER. Fifty thousand dollar grants.

Senator LAUTENBERG. Fifty thousand dollars. It is not a significant sum of money compared to the total cost of removal and the opportunity for recovery, which I don't think has been aggressively enough sought. I am asking you to very seriously consider what we have said here today. I am sorry that Senator Warner isn't here, but I am not sure that I don't hear a plea for further legislation.

We have got to get this issue resolved. I think it is very clear what your mission is in terms of a cleanup standard. We think that you have an obligation to achieve, wherever possible, the MCLG level. What I hear from you and your colleagues is practicable, is cost-based, is working with the numbers, but if your number is one of those that is up to use the proverbial, that is not too good. If you are 1 in a million or one in ten million or one in 10,000, if it is your kids or your family, that is a very unsatisfactory ratio.

I believe our obligation is to protect the public health to whatever extent that we can without upsetting an entire program or using all of the funds available.

Thank you all very much for being with us.

Dr. Porter. Thank you very much, Senator.

Senator Lautenberg. This subcommittee hearing is concluded.

[Whereupon, at 12:35 p.m., the subcommittee was recessed, subject to the call of the chair.]

[Statements and other material submitted for the record follow:]

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Testimony of

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on behalf of

Natural Resources Defense Council

before the

Senate Committee on Environment and Public Works

Subcommittee on Superfund and Environmental Oversight

June 25, 1987

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The Natural Resources Defense Council (NRDC) appreciates this opportunity to testify about EPA's implementation of §121 of the Superfund Amendments and Reauthorization Act (SARA) of 1986. NRDC is a national, non-profit environmental organization supported by more than 70,000 members and contributors. For more than a decade, NRDC's lawyers and scientists have worked for the establishment of protective drinking water standards for the broad range of toxic substances that are found in our ground and surface water supplies. We have submitted extensive comments on EPA's proposed MCLGs and MCLs for volatile, synthetic and inorganic chemicals in drinking water,[1] have sought judicial review of a number of final MCLGs, and were actively involved in the successful effort to enact strengthening amendments to the Safe Drinking Water Act (SDWA) last year. NRDC also strongly supported passage of the SARA amendments, and worked for the enactment of health-based cleanup standards in §121.

In brief, NRDC believes that Congress clearly stated its intention that as a general rule MCLGs rather than cost-compromised MCLs are to be applied in cleanups at Superfund sites. Many MCLs and even MCLGs are not adequate to protect health because they either allow high cancer risks, or exceed state well-closure levels, exceed taste and odor thresholds, ignore valid evidence of carcinogenicity, use inconsistent safety factors, or have other deficiencies which compromise the degree

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1. A representative sample of NRDC's comments on MCLGs and MCLs are submitted for the record.

of health protection provided. Each of these issues is discussed below.

The Statute and Legislative History Clearly Show the Intent That MCLGs Be Used Under §121 Of SARA

As enacted, §121 provides that if Federal or more stringent State standards, requirements, criteria or limitations are legally applicable or relevant and appropriate under the circumstances of a release or threatened release,

> "the remedial action selected under section 104 or secured under section 106 shall require... a level or standard of control... which at least attains such legally applicable or relevant and appropriate standard.... Such remedial action shall require a level or standard of control which at least attains Maximum Contaminant Level Goals... and water quality criteria... where such goals or criteria are relevant and appropriate under the circumstances...." (emphasis added).

In our view, there is no question that both Houses of Congress meant MCLGs to be used at Superfund sites as a general rule. This conclusion is buttressed by the rest of §121, which establishes a clear preference for attainment of the most stringent standard that is applicable or relevant and appropriate under Federal or State law, (§121(d)(A)(ii)), and repeatedly requires that remedial actions "at least" attain these stringent standards.

The intent that the substantive standards applied in remedial actions be as protective of human health and the environment as possible is also very clear from the face of the statute and from the legislative history. Such cleanup standards are intended to be health-based; they must "at a minimum...

assure[] protection of human health or the environment."[2] By comparison, MCLs are established by taking costs as well as health effects into account. Since cost considerations under §121 are not appropriate until after determination of the appropriate level of environmental and health protection to be achieved,[3] and MCLs are established with compliance costs taken into account, it is understandable why the statute, the Conference Report and other relevant legislative history specify the use of MCLGs rather than MCLs for Superfund cleanups.

The legislative history of §121 makes clear that MCLGs were specifically chosen over MCLs as cleanup standards at Superfund sites. As Senator Mitchell explained the day the SARA amendments were adopted:

> The Congress chose to apply RMCLs instead of relying only on the legally applicable Maximum Contaminant Levels (MCLs) because RMCLs are based solely on public health considerations. MCLs can reflect the modification and loosening of such health-based standards on the basis of cost considerations that should not be applied to Superfund cleanups. Use of MCLs for Superfund cleanups could result in cleanups that do not protect human health and the environment."[4]

Although some House members took issue with a number of statements made in the Senate the day the amendments passed, the use of MCLGs instead of either MCLs or the Groundwater Residue Guidance Levels being discussed in amendments to FIFRA, was not challenged. There is no ambiguity on this issue; the difference between MCLGs and MCLs was certainly familiar to the members of Congress during the debate on §121, since Safe Drinking Water Act amendments had been enacted only a few months before, in May, 1986. Recognizing this difference, Congress provided that more stringent standards must be selected over less stringent standards. For all of these reasons, MCLGs rather than MCLs are the standards properly to be applied in Superfund site cleanups.

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[2] H. Rep. No. 99-962, Superfund Amendments and Reauthorization Act of 1986, Conference Report, 99th Cong., 2d Sess. 246 (1986) (emphasis added).

[3] Id. at 245.

[4] Cong. Rec. S14915 (daily ed., Oct. 3, 1986).

EPA's contrary contention that "MCLs will generally be the applicable or relevant and appropriate requirement for determining cleanup levels of groundwater that may be used for drinking water,"[5] and that MCLGs will only be considered in "special circumstances" presenting "extraordinary risks,"[6] seems flatly inconsistent with the express language and clear intent of §121. It is difficult to imagine a clearer direction to the Agency than the specific references mandating the use of MCLGs in the statute and in the legislative history.

It is unfortunate that EPA has chosen to read the grant of discretion contained in the clause "where such goals... are relevant and appropriate under the circumstances of the release or threatened release" at the end of §121(d)(2)(A) as carte blanche to ignore the stated preference for the use of MCLGs as a general rule.[7] It is doubly unfortunate because such disdain for expressed Congressional intent pervades the Drinking Water Program at EPA, and has resulted in the establishment of MCLs and MCLGs which are far from protective of human health. Indeed, even if EPA were to agree that Congress meant "use MCLGs" when it said "use MCLGs," the SARA requirement that the substantive standards for remedial actions must assure protection of human health would still not be met in many cases. NRDC believes that Senator Durenberger's characterization of the record of EPA's Drinking Water program as "miserable, discouraging, [and] disturbing"[8] continues to be valid, and threatens to subvert the goals and purposes of both the 1986 SDWA amendments and §121 of SARA.

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[5] Letter from Lee M. Thomas to signatories of March 27, 1987 Congressional letter, dated May 21, 1987, p. 3.

[6] Thomas letter at 3.

As Currently Implemented, Many MCLs and MCLGs Are Inadequate To Assure Protection of Public Health

Despite EPA's arguments to the contrary, NRDC believes that MCLs cannot assure protection of public health. By definition, they are compromises of health-based standards, and in practice are based on EPA's assessment of what a medium to large public water supplier can afford, with attention as well to the economic circumstances of small systems. In many cases, the MCLs for both carcinogens and non-carcinogens fail to provide the maximum feasible protection required by the Safe Drinking Water Act. SDWA §1412(b)(4), 42 U.S.C. §300g-1(b)(4).

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[7] See Thomas letter at 2.

[8] Cong. Rec. S6285 (May 21, 1986).

EPA's record shows that the MCLs for carcinogens often allow high risks of cancer. For example, in regulations due out imminently under the 1986 amendments to the SDWA, EPA will be setting final MCLs for a number of volatile organic chemicals, most of which are carcinogens. Although Administrator Thomas' letter to the Committee describes a cancer risk range of 10^{-4} to 10^{-7} (i.e., one in ten thousand to one in ten million) as providing "adequate protection of human health,"[9] the notice accompanying the new MCLs for volatile organics narrows the range to 10^{-4} to 10^{-6}, (i.e., one in ten thousand to one in one million). The latter range is further described by EPA as "a reasonable nominal lifetime risk range."[10] The Committee should be aware that a 10^{-4} risk level, although called "reasonable" and "nominal" by EPA, would allow 24,000 additional cancer cases from exposure to each separate contaminant if the entire United States population were exposed at that level; a 10^{-6} risk level would allow 240 additional cancer cases from exposure to each contaminant.

Applying this dubiously "protective" approach, EPA will be setting an MCL for vinyl chloride, described by the Agency as "a known human carcinogen of high potency"[11] at a level which allows an even greater risk than 10^{-4}! In addition, the MCLs for carbon tetrachloride and 1,2-dichloroethane will allow a one in ten-thousand cancer risk, while the MCLs for benzene and trichloroethylene will allow a one in one hundred thousand cancer risk. For two other carcinogens, 1,1-dichloroethylene (a chemical cousin of vinyl chloride) and p-dichlorobenzene, both of which have been called "possible human carcinogens" by EPA, the MCLs will allow cancer risks of 10^{-4} and 10^{-5}, respectively.

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[9] Thomas letter at 3.

[10] National Primary Drinking Water Regulations; Volatile Organic Compounds; Monitoring for Unregulated Contaminants, (so-called "Red Border Package"), May 22, 1987, p. 40.

[11] Id. at 43.

It is instructive to compare EPA's high risks policy for carcinogens with the actions and opinions of other entities concerned about cancer risks from environmental exposures. For example, New Jersey passed a law in 1984 providing that standards for carcinogens in drinking water may allow no greater risk than 10^{-6} or one in one million. Similarly, in a report on the risks posed by the presence of carcinogenic pesticides in the food supply, the National Academy of Sciences suggested that only cancer risks lower than 10^{-6} could be considered "negligible."[12] While NRDC does not necessarily agree that 10^{-6} constitutes a truly negligible risk of cancer, certainly risks above that level are considered significant by the NAS and others.

The MCLs and MCLGs for 1,1-dichloroethylene and p-dichlorobenzene exemplify a second unprotective aspect of EPA's MCLs for carcinogens. Drawing fine lines among carcinogens, based on the evidence available at a single point in time, EPA has classified them as merely "possible" human carcinogens and

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12. National Academy of Sciences, Regulating Pesticides in Food: The Delaney Paradox, Washington, D.C. (1987) at 6-7.

therefore has provided a lesser degree of protection. Rather than erring on the side of safety, and establishing an MCLG of zero for all carcinogens as the SDWA intends, the Agency has chosen effectively to disregard the cancer evidence and to base the MCLGs and MCLs on other chronic effects than cancer.

For p-dichlorobenzene, EPA initially proposed an MCLG and MCL of 750 ug/l, but prior to final promulgation received new evidence showing the compound to have sufficient evidence of carcinogenicity in two species according to the National Toxicology Program (NTP) and International Agency for Research on Cancer (IARC). After proposing an MCLG of zero, and an MCL of 5 ug/l, the Agency reclassified the compound to a lower cancer risk category, despite the conclusions of NTP and IARC, and is about to promulgate an MCLG and MCL of 75 ug/l. Thus, neither the MCLG nor the MCL for p-dichlorobenzene will provide protection against the cancer risk. In fact, the MCL will be set at a level 15 times higher than EPA originally proposed to protect against that risk.

A similar approach was taken with 1,1-dichloroethylene, which was originally proposed with zero as the MCLG. EPA subsequently re-classified it as only a "possible" human carcinogen and therefore has allowed a higher exposure in the MCLG and MCL. Both were set at 7 ppb. NRDC does not consider such fine line-drawing in a developing data base to be protective against the risks posed by such carcinogenic compounds in drinking water. This approach leaves the public to bear a cancer risk that the Agency used to consider sufficient to warrant protection, prior to adoption of its new and less protective Cancer Risk Assessment Guidelines.

A third reason why MCLs, even for carcinogens, are not sufficiently protective of human health arises from the fact that EPA has established the levels based on what an average laboratory can measure rather than on what treatment technology can feasibly achieve. This level, called the "practical quantitation level" or PQL has been established at 5 ug/l for most carcinogenic contaminants with MCLGs of zero. Although the SDWA directs EPA to establish MCLs as close to the MCLGs as is technologically feasible, the Agency has not done so.

By EPA's own account, volatile organic chemical concentrations in drinking water can be reduced routinely to 1 ug/l (0.001 mg/l) or lower with the use of best treatment technology generally available.[13] If the best treatment technologic generally available can routinely reduce volatile organic concentrations in drinking water to 1 ug/l or lower, with concomitant reductions in cancer risk, then EPA's establishment of the MCLs at a higher level keyed to the capabilities of average analytical laboratories is less protective of health than it need be. If MCLGs rather than MCLs were applied as clean-up standards at Superfund sites as Congress intended, routinely available technology could be used to comply with those standards "to the maximum extent practicable" as suggested by Rep. Lent during the debate on passage of the SARA Conference Report in the House.[14] A higher degree of cleanup would necessarily be attained, and in consequence, a higher degree of health protection as well.

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[13] 50 Fed. Reg. 46917. (November 13, 1985). According to EPA "two technologies, packed tower aeration and granular activated carbon (GAC) adsorption, are specifically suitable for VOC control, have high theoretical and empirically determined removal efficiencies (90-99% or more), have been used by drinking water systems in the U.S., and their costs are reasonably affordable when used by large systems. These technologies are thus considered best technologies generally available (BTGA) for determination of the MCLs."

For non-carcinogens, EPA has decided in advance that MCLs "will nearly always be set at the MCLG,"[15] and has established and proposed MCLG/MCLs for a large number of contaminants at such high levels that some states, such as New York, have indicated they will be disregarding them in favor of more protective standards. Unfortunately, many states are prohibited by law from adopting standards more stringent than federal standards, and will therefore be unable to protect their citizens against EPA's loose standards.

New York State is now in the process of codifying its long-standing action levels for groundwater contamination, which require wells to be closed where a single volatile organic contaminant exceeds 5 ug/l or a single synthetic organic contaminant exceeds 50 ug/l or where two or more organic contaminants exceed 100 ug/l. By comparison, EPA's pending MCLGs for synthetic organic and inorganic contaminants include 12 which substantially exceed New York's close-the-well levels. New York State has commented with respect to EPA's volatile organics proposals that some of the MCLGs are at levels indicative of "gross contamination."[16] The list of 12 compounds, which is set forth below in Table 1, includes many contaminants found in groundwater contaminated at Superfund sites.

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[14] Cong. Rec. H9566 (daily ed., Oct. 8, 1987).

[15] Thomas letter at 4.

TABLE I

RMCLs for SOCs Being Proposed at Concentrations Greater than 50 ppb

Compound	RMCL (ppb)
cis-1,2,-dichloroethylene	70
o-dichlorobenzene	620
2,4-D	70
ethylbenzene	680
methoxychlor	340
monochlorobenzene	60
pentachlorophenol	220
styrene	140
toluene	2000
2,4,5,-TP	52
trans-1,2-dichloroethylene	70
xylene	440

Many of EPA's proposed MCLGs (and therefore MCLs), shown below in Table 2, also exceed taste and odor thresholds. If these MCLs are used in Superfund clean-ups, they will leave the groundwater tasting and smelling of chemicals.

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[16] Testimony of Michael Burke, P. E., New York State Dept. of Health, EPA Proposed Rulemaking on Volatile Organic Compounds, Maximum Contaminant Levels, Albany, N.Y., January 13, 1986.

TABLE 2

Contaminant	Proposed RMCL(mg/L)	Estimated Organoleptic Threshold (mg/L)
copper	1.3	1.0
ethylbenzene	0.68	0.1-0.2
ortho-dichlorobenzene	0.62	0.01-0.03
pentachlorophenol	0.2	0.030
styrene	0.14	0.005-0.773
toluene	2.0	1.0
xylene	0.44	0.3

There are also other problems with the way EPA has been establishing or proposing MCLG/MCLs. For example, for several contaminants, the Agency decided to ignore the carcinogenicity evidence entirely or to discount it in setting MCLGs and MCLs for various reasons which give the contaminants the benefit of the doubt. Contaminants which have not been given an MCLG of zero despite valid evidence of carcinogenicity include asbestos, a known human carcinogen, cadmium, chromium, styrene, arsenic, and nitrate/nitrite. In addition, in calculating the allegedly "protective" MCLG/MCL levels, EPA has used inconsistent safety factors, ranging from 2 to 1000, has failed to account for the special sensitivity of children, even for acutely toxic contaminants, and has ignored other routes of exposure, such as inhalation and dermal adsorption from use of drinking water in washing and cooking, as well as other sources of exposure, such as diet.[17] Since these problems are identified with EPA's setting of both MCLG and MCLs for non-carcinogenic contaminants in drinking water, the solution goes beyond EPA's reluctance to consider MCLGs under §121 except in "extraordinary circumstances."

The setting of standards under the SDWA is now of central importance both for corrective action under RCRA and for cleanups at Superfund sites, in addition to the more traditional protection of public water supplies. EPA may not believe that the MCL process compromises protection of public health, but in NRDC's opinion, there can be no other conclusion. For EPA to call cancer risks at and above 10^{-4} "a sufficient level of protectiveness"[18] demonstrates how far the Agency has moved away from a truly health-protective approach to standard-setting under the SDWA. Not only does the Agency appear to have lost its sense of mission, but it is aggressive in asserting the right to disregard Congressional intent under a variety of its governing statutes. Only a callous and cavalier attitude towards the health of the American people could deem to be "acceptable," cancer risks that other governing, regulatory and scientific bodies, such as the New Jersey legislature, the New York State Department of Health, and the National Academy of Sciences, consider to be high.

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[17] These issues are discussed in detail in NRDC's comments on Proposed Recommended Maximum Contaminant Levels for Synthetic Organic Chemicals, Inorganic Chemicals and Microbiological Parameters, May 5, 1986, which have been submitted for the record.

[18] Thomas letter at 13.

Nor can the courts be looked to for relief against such discretion run amok. The courts, and especially the D.C. Circuit, which has exclusive jurisdiction to review EPA's regulatory actions under the SDWA, RCRA, and CERCLA, are becoming increasingly differential to agency interpretations of the laws they administer, unless Congress has spoken with "laser-like clarity."[19] Although NRDC believes that the Congress spoke with such clarity in enacting §121, it may be necessary to further circumscribe the Agency's discretion to achieve the intended result. At the same time, steps must be taken to rein in the MCLG/MCL development process so that it reflects the preventive, health protective intent of the SDWA. At the very least, the Agency must be directed to treat all carcinogens as if they may pose a cancer risk to humans, to establish the RMCL for non-threshold contaminants at zero if a safe level of exposure cannot be determined, and to utilize more conservative approaches in setting RMCLs for non-carcinogens.

Finally, NRDC urges the Environment Committee to conduct oversight of EPA's Drinking Water program as soon as possible. The program has worked behind closed doors for years, out of the mainstream of other EPA programs, and without careful Congressional oversight. It is time to roll back the rock and examine what has been going on underneath it for such a long

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19. Natural Resources Defense Council v. Thomas, 805 F. 2d 410, 421, 430 (D.C. Cir. 1986).

time. The public deserves and is demanding a greater degree of protection of our groundwater and drinking water supplies than EPA is prepared to provide, and is entitled to know why and who is responsible for this breach of the duties Congress has entrusted to the Agency.

NRDC

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COMMENTS OF THE
NATURAL RESOURCES DEFENSE COUNCIL, INC.
ON THE
U.S. ENVIRONMENTAL PROTECTION AGENCY'S
NATIONAL PRIMARY DRINKING WATER REGULATIONS
VOLATILE SYNTHETIC ORGANIC CHEMICALS
PARA-DICHLOROBENZENE
PROPOSED RULEMAKING
52 FEDERAL REGISTER 12876 (APRIL 17, 1987)

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May 22, 1987

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I. Introduction

These comments are submitted by the Natural Resources Defense Council (NRDC), and address the U.S. Environmental Protection Agency's (EPA) rule reproposing a Maximum Contaminant Level Goal (MCLG) and Maximum Contaminant Level (MCL) for p-dichlorobenzene in drinking water. NRDC is a national, non-profit environmental organization supported by over 70,000 members and contributors. For more than a decade NRDC has worked for the establishment of drinking water standards for the broad range of toxic chemicals that are present in our drinking water supplies. We submitted extensive comments on EPA's proposed MCLGs and MCLs for volatile, synthetic and inorganic chemicals in drinking water. We welcome today's proposal to regulate p-dichlorobenzene as a probable human carcinogen with an MCLG of zero, and submit the following comments in support of it. We also would like to comment on EPA's proposed MCL for p-dichlorobenzene. Specifically, we believe that:

(1) EPA is required by the Safe Drinking Water Act (SDWA) to set an MCLG of zero for p-dichlorobenzene.

(2) EPA's alternative proposal to classify p-dichlorobenzene as a Group C compound (limited evidence of carcinogenicity) is not justified based on a conservative interpretation of the evidence.

(3) Even if the weight of evidence indicated the need to reclassify p-dichlorobenzene as a Group C substance, an MCLG of zero would still be justified under the SDWA.

(4) EPA should set a treatment technique requirement rather than an MCL for p-dichlorobenzene.

(5) Primacy agents should be allowed to require point-of-entry but not point-of-use devices as a condition of obtaining a temporary variance from an MCL for any VOC.

II. EPA is required by the Safe Drinking Water Act (SDWA) to set an MCLG of zero for p-dichlorobenzene.

Standard setting under the Safe Drinking Water Act is a two-step process. EPA must establish a non-enforceable health-based goal (the MCLG) and set the standard (MCL) as close to this goal as is technologically feasible taking costs into consideration.[1] The Act adopts a strong preventive approach to health protection. MCLGs are to be set to prevent any known or anticipated adverse health effects; they must also include an adequate margin of safety. If there is no safe threshold, as in the case of carcinogens, the MCLG must be set at zero.[2],[3]

The National Toxicology Program bioassay on p-dichlorobenzene provides sufficient evidence of carcinogenicity in two species of laboratory animals. This recently published

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1. National Primary Drinking Water Regulations - Volatile Synthetic Organic Chemicals; Para-Dichlorobenzene, 52 Fed. Reg. 12876 (April 17, 1987).

2. H.R. Rep. No. 93-1185, 93rd Cong., 2nd Sess. 20 (1974).

3. National Primary Drinking Water Regulations; Volatile Synthetic Organic Chemicals, 50 Fed. Reg. 46880, 46895-96, (November 13, 1985).

gavage study demonstrates a dose-related increase in the incidence of tubular cell adenocarcinoma of the kidney in male rats.[4] The increase occurred with a significant positive trend ($P=0.005$) and the incidence in the high dose group was significantly greater ($P=0.011$) than in the controls.[5] In mice, the incidence of hepatocellular carcinomas and hepatocellular adenomas occurred with positive trends ($P<0.001$), and was significantly greater in both high dose groups ($P<0.001$) and in low dose males ($P=0.047$) than in the controls. In addition, a rare tumor, hepatoblastoma, was observed in four high dose male mice. This tumor was not seen in any of the almost 3000 male mice controls at NTP.[6]

NTP concluded that the p-dichlorobenzene bioassay provides clear evidence of carcinogenicity in male rats and in mice of both sexes.[7] This conclusion was subsequently affirmed by the NTP Board of Scientific Counselors' peer review committee.[8] Based on the results of this bioassay an MCLG of zero is clearly warranted under §1412(a)(4) of the SDWA.

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4. National Toxicology Program, Toxicology and Carcinogenesis Studies of 1,4-Dichlorobenzene in F344/N Rats and $B6C3F_1$ Mice, U.S. Department of Health and Human Services, 1987.

5. Id.

6. This rare tumor has not been observed historically in any of the 1,091 vehicle (corn oil gavage) control male mice or the 1,784 untreated control male mice.

7. National Toxicology Program, supra note 4, p. 5.

8. Id. at 9.

III. EPA's alternative proposal to classify p-dichlorobenzene as a Group C compound (limited evidence of carcinogenicity) is not justified based on a conservative interpretation of the evidence.

EPA's current proposal would correctly classify p-dichlorobenzene as a Group B_2 probable human carcinogen based on sufficient evidence of oncogenicity in laboratory animals. Under EPA's carcinogen risk assessment guidelines, this classification is made when there is an increased incidence of malignant tumors (or combined benign and malignant tumors) in (1) multiple species or strains or (2) in multiple experiments (preferably with different routes of administration or using different dose levels) or (3) to an unusual degree with regard to incidence, type of tumor or age at onset.[9] The NTP bioassay clearly established a statistically significant increase in tumors in two species of laboratory animals. Thus, the bioassay provides sufficient evidence of carcinogenicity in animals according to EPA's carcinogen risk assessment guidelines. Based on the findings of this bioassay, classification of p-dichlorobenzene as a probable human carcinogen is warranted.

The Agency is also requesting comment on the possible alternative reclassification of p-dichlorobenzene as a Group C substance (limited evidence of carcinogenicity), and has listed a number of issues it suggests could support this reclassification.[10] If the Agency decides to classify the compound as a Group C carcinogen, it would be regulated as a possible human carcinogen with the MCLG and MCL set at 0.075 mg/l instead of at zero and 0.005 mg/l, respectively. However, NRDC believes that EPA's alternative proposal to classify p-dichlorobenzene as a Group C carcinogen would represent a flagrant departure from the Agency's own carcinogen risk assessment guidelines, and that the evidence clearly supports a B_2 classification. According to the guidelines, the evidence for p-dichlorobenzene clearly constitutes sufficient evidence of carcinogenicity in experimental animals. None of the issues raised by EPA in any way supports "the alternative view that p-dichlorobenzene should be classified in Group C."[11]

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[9] Guidelines for Carcinogen Risk Assessment, 51 Fed. Reg. 33992, 33999 (Sept. 24, 1986).

The instant proposal suggests that an alternative interpretation of the Agency's cancer risk assessment guidelines could diminish the significance of the findings of tumors in the mouse liver from "sufficient" to "limited," which would provide support for placing p-dichlorobenzene in Group C, i.e., limited evidence of carcinogenicity.[12] However, EPA's cancer guidelines clearly state that mouse liver tumors will generally be considered "sufficient" evidence of carcinogenicity even when they constitute _the only tumor response to an agent_.[13] Yet, p-dichlorobenzene has clearly been shown to be carcinogenic in _both_ rats and mice. Thus, it is unacceptable and improper for EPA now to suggest that a reevaluation of the mouse liver tumor data could support placing p-dichlorobenzene in the limited evidence of carcinogenicity category, given the fact the compound has also been shown to be carcinogenic in rats.

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[10] 52 Fed. Reg. at 12878.

[11] Id.

[12] Id.

Even if the mouse liver tumors were the only positive findings of the NTP bioassay, they would still meet the criteria for sufficient evidence of carcinogenicity. According to the EPA cancer risk assessment guidelines, the findings of mouse liver tumors can change the classification from sufficient to limited evidence of carcinogenicity only if such factors as the following are seen:[14]

(1) The increase occurs only in the highest dose group. However, in the NTP bioassay there was a statistically significant increase in liver tumors in _both_ dose groups among male mice and there was a statistically significant positive dose-response trend among females.[15]

(2) The excess of tumors is seen only in a single sex.

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[13] 51 Fed. Reg. at 33995 (emphasis added). The entire discussion in the guidelines of how to determine whether mouse liver tumors constitute sufficient or limited evidence of carcinogenicity relates solely to situations where mouse liver tumor comprise the only evidence of carcinogenicity.

[14] 51 Fed. Reg. at 33995.

[15] National Toxicology Program, _supra_ note 4, p. 4.

However, in the NTP bioassay the increase in hepatocellular carcinoma was seen in both sexes.[16]

(3) The tumors that occur are predominantly benign. However, in the NTP bioassay there was a statistically significant increase in both benign (hepatocellular adenomas) and malignant (hepatocellular carcinomas) with the greatest increase seen in malignant tumors.[17]

(4) There is no substantial dose-related increase in the proportion of tumors that are malignant. However, in the NTP bioassay there was a positive dose-response trend in hepatocellular carcinomas that was statistically significant for both sexes.[18]

EPA also states that support for placing p-dichlorobenzene in Group C could derive from the total weight of evidence, including results from the NTP bioassay coupled with earlier animal studies which were negative, plus the generally negative short-term test results.[19] However, EPA's cancer guidelines specifically preclude this type of weighing of positive and negative data to determine the level of evidence of carcinogenicity. The guidelines state that a "positive carcinogenic response in one species/strain/sex is not generally negated by negative results in other species/strain/sex."[20] Rather, negative studies can be used to discount a positive study only when "[r]eplicate negative studies... are essentially identical in all other respects to a positive study...."[21] Yet, this is clearly not the case with p-dichlorobenzene.

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[16] National Toxicology Program, supra note 4.

[17] Id.

[18] Id.

[19] 52 Fed. Reg. at 12878.

The only other carcinogenicity study on p-dichlorobenzene was by inhalation rather than gavage, and exposed the animals for a much shorter period (57-76 weeks as opposed to a 102 weeks of exposure use in the NTP bioassay).[22] Thus, the EPA cancer guidelines clearly prohibit the Agency from relying on the results from this negative bioassay to support a classification of p-dichlorobenzene as a Group C carcinogen.

Similarly, although p-dichlorobenzene has generally been negative in short-term tests for genotoxicity, the Agency's cancer guidelines unequivocally state that "[l]ack of positive results in short-term tests for genetic toxicity does not provide a basis for discounting positive results in long-term animal studies."[23] EPA's suggestion that the negative short-term test results can be weighed with the positive NTP bioassay to determine the overall evidence of carcinogenicity for p-dichlorobenzene represents yet another improper and unacceptable departure from the Agency's established cancer risk assessment guidelines.

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[20] 51 Fed. Reg. at 33995.

[21] Id.

[22] U.S. Environmental Protection Agency, Office of Drinking Water, Final Draft Criteria Document for Orthodiclorobenzene, Meta-dichlorobenzene and p-dichlorobenzene, 1987.

[23] 51 Fed. Reg. at 33994.

The Agency also states that support for placing p-dichlorobenzene in Group C could derive in part from uncertainties associated with extrapolation of findings from studies in which the agent was administered by corn oil gavage.[24] While this issue is not specifically discussed in the EPA cancer risk assessment guidelines, the Agency has itself concluded elsewhere that corn oil gavage is an accepted testing technique.[25] EPA presented no rationale for discrediting the results of corn oil gavage bioassays.

A recent review by several researchers, including Dr. Frederica Perera of the Columbia University School of Public Health and Dr. James Fouts of the National Institute of Environmental Health Sciences, validates the gavage route as an appropriate bioassay protocol for assessing the potential of a compound to be a human carcinogen.[26] This review found that of the 117 chemicals or chemical processes listed as known or reasonably anticipated to be carcinogenic in the National

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[24] 52 Fed. Reg. at 12878.

[25] See, e.g., Natural Resources Defense Council v. Environmental Protection Agency, Civ. No. 85-1840, et al., (filed D.C. Cir., Dec. 24, 1985), Brief for Respondent at 43, (1,1-dichloroethylene case).

[26] Perera, F., Brennan, T., and Fouts, James R., Comments on the Significance of Positive Carcinogenicity Studies Using Gavage as the Route of Exposure, submitted for publication (1987).

Toxicology Program's Third Annual Report on carcinogens, 23 were listed as positive by gavage.[27]. Of these 23, twenty had also been studied by at least one other route of exposure and nineteen (or 95%) of these 20 were found to be positive by at least one other non-gavage route. Further, in all 19 cases, positive results were obtained by a non-gavage route in the same species of animal where the gavage administration led to the induction of cancer. The authors concluded that these findings indicate that the gavage route provides a meaningful basis for assessing potential chemical hazards.[28]

Concern over corn oil gavage has been expressed following a 1984 review of the NTP data base which suggested that there was an increase in pancreatic acinal cell adenoma and a decrease in leukemia among some male control rats receiving corn oil gavage compared with untreated controls, although these effects were variable from one study to another.[29] However, in none of the positive corn oil gavage studies was the increase in pancreatic acinal cell tumors the sole evidence of carcinogenicity for any test chemical.[30]

Even if gavage causes an increase in pancreatic acinal cell tumors, this finding is not germane to the evaluation of p-dichlorobenzene because there was no increase in pancreatic tumors in either species used in the NTP bioassay. The finding of clear evidence of carcinogenicity in both species is based on increases in other neoplasms. Moreover, the significant malignancy seen in treated male rats in the NTP bioassay, renal tubular cell adenocarcinomas, is extremely uncommon and has only been diagnosed in 4/1098 corn oil gavage controls in previous NTP studies.[31]

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[27] Id.

[28] Id.

[29] Haseman, J.K., et al. (1984). Neoplasms observed in untreated and corn oil gavage control groups of F344/N rats and $B6C3F_1$ mice. (In Press).

[30] Id.

Finally, the Agency states that support for placing p-dichlorobenzene in Group C could derive from concern that the maximum tolerated dose (MTD) in the NTP bioassay may have been exceeded and that the carcinogenic effects may be a result of excessive toxicity caused by exposure above the MTD. However, there is no indication that the MTD was exceeded in the mice. Neither survival nor body weight was affected by administration of p-dichlorobenzene in either the low or high dose groups.[32] Further, according to Dr. Scot Eustis, one of the principal pathologists for the study, liver toxicity (single cell necrosis) among treated mice was not severe but generally minimal to mild.[33]

Among male rats in the high dosage group the MTD may have been exceeded, since survival and body weight were significantly lower than controls. However, the MTD does not appear to have been exceeded among the low dose group since both survival and body weight were similar to controls. Nonetheless, there was a statistically significant positive dose-response trend in renal tubular cell adenocarcinoma, with the incidence increased in both low-dose (6% incidence) and high-dose (14% incidence) groups over controls (2%).[34] Renal tubular cell adenocarcinoma is extremely rare.[35] Hence, the increase in this rare tumor in both the low-dose and high-dose groups indicates that the carcinogenic response was compound related and not dependent on the MTD having been exceeded. Moreover, as noted above, the MTD does not appear to have been exceeded in the low-dose group even if it may have been exceeded in the high-dose group.

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[31] National Toxicology Program, supra note 4.

[32] Id. at 62.

[33] Id., at 9.

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34. National Toxicology Program, *supra* note 4, p. 62.

35. *Id*. at 63.

IV. Even if the weight of evidence indicated that p-dichlorobenzene should be reclassified as a group C substance, i.e., a possible human carcinogen, an MCLG of zero would still be justified under the SDWA.[36]

If EPA decides to classify p-dichlorobenzene as a Group C compound (possible human carcinogen), the Agency would not regulate it as a carcinogen with an MCLG of zero but instead would base the MCLG on non-carcinogenic endpoints of toxicity with an added safety margin. In NRDC's view, nothing in the language of the statute or its legislative history justifies regulating as a non-carcinogen a substance that is classified by EPA as a possible human carcinogen. EPA has interpreted the statute to require the treatment of a contaminant as a carcinogen (i.e., having no threshold and therefore regulated under the SDWA by means of an MCLG of zero) only if the evidence is sufficient to warrant the classification of the contaminant as a "probable" or "known" human carcinogen. However, requiring that a compound be a "probable" human carcinogen was explicitly rejected by Congress as the standard for regulating a substance under the SDWA.

The statute addresses contaminants which "may" have any adverse effect on health, and not merely contaminants which "will" have such effects. Thus, preponderant evidence of harm is not a prerequisite for protection against a particular health effect in an MCLG. Indeed, a much more protective standard was intended by Congress. Specifically, the SDWA requires the Administrator to set MCLGs at "a level at which... no known or anticipated effects on the health of persons occur...."[37] The language of the statute makes clear that MCLGs must fully protect not only against "known" health effects but also against "anticipated" effects. If Congress had intended that MCLGs protect only against adverse health effects that are certain to occur, it would not have explicitly provided for protection against effects that cannot be so proven but that are merely anticipated.

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[36] The following discussion was taken in large part from Natural Resources Defense Council v. Environmental Protection Agency, Civ. No. 85-1840, et. al., (filed D.C. Cir., Dec. 24, 1985, Brief for Petitioner (RMCLs for VOCs).

Legislative history confirms and explains this conclusion. The House Report makes clear that, in determining the level at which to set an MCLG, the Administrator "must decide whether any adverse effects can be reasonably anticipated, even though not proved to exist."[38] The Report further states that Congress did not intend "to require conclusive proof that any contaminant will cause adverse effects as a condition for regulation of a suspect contaminant. Rather, all that is required is that a contaminant may have such an effect."[39]

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[37] §1412(b)(1)(B), 42 U.S.C. §300g-1(b)(1)(B)(recodified without amendment at §1412(b)(4), 42 U.S.C. §300g-1(b)(4)(1986)).

[38] H.R. Rep. No. 93-1185, 93rd Cong., 2nd Sess. 20 (1974).

[39] Id. at 10. Possibly the clearest explanation of the basis for standard-setting under §1412 came from Representative Rogers who stated during the House debates that §1412 "does not require preponderant proof of a demonstrable health hazard as a precondition for standard setting." Rather,

The report accompanying the House version of the SDWA Amendments of 1986 reinforces the original intent of the 1974 Act. This report states that, under the 1974 Act, "[t]he Administrator must regulate if there is a rational basis to believe that a contaminant may have an adverse effect on the health of persons."[40]

Congress clearly rejected the proposition that an MCLG protect only against adverse health effects that will occur; instead RMCLs must protect against all effects that may occur. Congress similarly directed that the MCLG protect against adverse health effects even if there is not preponderant or conclusive evidence that a contaminant will produce a particular effect; instead, if there is some basis to believe that such an effect will occur, the MCLG must protect against the effect.

In sum, EPA's proposal to regulate p-dichlorobenzene as a non-carcinogen, if reclassified as a Class C carcinogen, would undermine the "overriding" purpose of the SDWA "to maximize protection of the public health," as clearly explained in the legislative history.[41]

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regulation of a contaminant must proceed even in light of evidence that is "inconclusive and inconsistent" as long as there is "some basis to believe" the contaminant endangers public health. 120 Cong. Rec. 36373 (1974).

[40] H.R. Rep. No. 99-168, 99th Cong., 1st Sess. 22 (1985) (emphasis added).

[41] H.R. Rep. No. 93-1185 at 12.

V. EPA should set a treatment technique requirement rather than an MCL for p-dichlorobenzene.

Section 1412(b)(3) of the Safe Drinking Water Act (SDWA) requires that EPA set MCLs "as close to" the MCLGs "as is feasible." The term "feasible" means "feasible with the use of the best technology, treatment techniques and other means, which the Administrator finds are generally available (taking costs into consideration)." According to EPA, currently available treatment techniques for p-dichlorobenzene appear to achieve 99-99.9 percent reductions in concentration or to levels below 0.1 ug/l.[42] However, EPA also notes that analytical methods economically and technically feasible to measure p-dichlorobenzene in water can not accurately detect concentrations below 5 ug/l.[43] In other words, it is feasible to remove p-dichlorobenzene to levels below that which can be feasibly measured.

When such a situation arises, SDWA §1401(1)(c) requires EPA to establish a treatment technique in lieu of an MCL. Specifically, "if... it is not economically or technically feasible to so ascertain [the] level of such [a] contaminant, [the Administrator shall specify] each treatment technique known to the Administrator which leads to a reduction in the level of such contaminant sufficient to satisfy the requirements of §1412."[44]

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[42] 50 Fed. Reg. 46902 (November 13, 1985).

[43] 52 Fed. Reg. 12876 (April 17, 1987).

In an in-house memo, EPA has acknowledged that its own data support the application of a treatment requirement for the VOCs for which the Agency has set zero MCLGs.[45] This memo further points out significant advantages a treatment requirement may have over the option of developing MCLs for each of the seven VOCs with zero MCLGs (for which MCLs are now pending), and also for a large number of synthetic organic chemicals (SOCs) that will be coming up for regulation. Because there is much similarity in effective treatment technologies now available for the removal of VOCs and a great many other SOCs, reliance on treatment in place of MCLs may relieve the enormous burden EPA now bears setting MCLs. It would also certainly simplify the compliance process for the water utility industry. Moreover, reliance on a generic BAT for synthetic organic contaminants may ease the process of meeting the 1988/91 listing and regulation deadlines mandated under the 1985 SDWA amendments.[46]

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44. Other zero-RMCL contaminants for which EPA has proposed MCLs but for which a treatment requirement appears to be appropriate are trichloroethylene; carbon tetrachloride; vinyl chloride; 1,2-dichloroethane; and 1,1-dichloroethylene. 50 Fed. Reg. 46902 (November 13, 1985).

45. See memorandum from David W. Schnare, Program Manager, Policy and Economic Analysis Branch, U.S. EPA, Office of Drinking Water, to Mike Cook, etc. regarding a Phase I Treatment Technique Requirement. May 28, 1986.

46. Id.

NRDC believes that EPA is legally bound under the SDWA to establish treatment requirements rather than MCLs for each of the seven VOCs for which it has set zero MCLGs, including p-dichlorobenzene. The arguments for such action, recited here, are clearly stated in the aforementioned Schnare memo as is EPA's "vulnerability to successful legal attack" in the event the Agency chooses to set MCLs instead.

VI. Primacy agents should be allowed to require point-of-entry but not point-of-use devices as a condition of obtaining a temporary variance from an MCL for any VOC.

EPA is proposing that primacy agents be allowed to require point-of-use devices as a condition of obtaining a temporary variance from an MCL for any VOC.[47] EPA also is proposing to impose certain conditions on point-of-use (POU) devices that are installed as a condition of receiving a variance or exemption.[48]

NRDC does not believe that POU devices can ever be considered acceptable technology to meet MCLs for a VOC. By definition, POU devices, installed as faucet-mounted devices or under-the-sink line bypass devices, treat the water at a single tap. Consequently, a household with one device to filter the kitchen (in few if any households are POU devices installed at every tap) is not protected from respiratory and dermal exposures associated with bathing or washing with VOC contaminated water.

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[47] 52 Fed. Reg. 12881 (April 17, 1987).

[48] Id.

Several studies to date have concluded that exposures to toxic chemicals volatilizing from all indoor water uses (showers, baths, dishwashing, etc.) have the potential for being substantial and larger than those from direct ingestion.[49]

On the other hand, point-of-entry (POE) devices, capable of reducing the contaminant concentration below the MCL at the point the water enters the household, could provide the necessary interim protection throughout a home and therefore could be considered as a variance condition. It cannot be stressed enough, however, that POE devices must be viewed as temporary means of protection and not a permanent solution to a public drinking water contamination problem. It is unclear whether monitoring and maintenance of the devices in any but the smallest systems can be sustained at an adequate level over the long term so as to assure compliance with MCLs. Moreover, it would not be surprising to find that, in most cases, the cost of managing this decentralized system in accordance with EPA's conditions cutlined in the proposed regulation would exceed the cost of establishing a central treatment facility.

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[49] J.B. Andelman, et al., Volatilization of Organic Chemicals from Indoor Uses of Water. Chemicals in the Environment, (London, Selper, Ltd., 1986) pp. 323-330; J.B. Andelman, et al., Inhalation Exposure in the Home to Volatile Organic Contaminants of Drinking Water. The Science of the Total Environment, 47 (Amsterdam, Elsevier Science Publishers B.V., 1985) pp. 443-460; H.S. Brown, et al., The Role of Skin Absorption as a Route of Exposure for Volatile Organic Compounds (VOCs) in Drinking Water. AJPH Vol. 74, No. 5, May 1984.

In sum, NRDC believes POE, but not POU, devices are effective interim treatment devices and could be required as a condition of obtaining a temporary variance from meeting an MCL for a VOC through centralized treatment. In some cases, the cost or difficulty of bringing on-line immediately the appropriate system-sized treatment may be prohibitive. POE devices can provide protection to the consumer while these problems are being resolved.

VII. Conclusion

For the reasons discussed above, we urge EPA to promulgate a zero MCLG for p-dichlorobenzene as expeditiously as possible, and to set a treatment technique rather than an MCL for this compound. Further, we recommend that EPA allow point-of-entry but not point of use devices as a condition for attaining a variance from the MCL for any VOCs, but that such variances be granted only on an interim basis.

Respectfully submitted,

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COMMENTS

OF THE

NATURAL RESOURCES DEFENSE COUNCIL, INC.

ON

U.S. ENVIRONMENTAL PROTECTION AGENCY'S NATIONAL PRIMARY DRINKING WATER REGULATIONS

VOLATILE SYNTHETIC ORGANIC CHEMICALS

PROPOSED RULEMAKING

50 FEDERAL REGISTER 46902 (NOVEMBER 13, 1985)

February 11, 1986

Prepared by:

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Jacqueline Warren

These comments on the U.S. Environmental Protection Agency's (EPA) proposal to set National Drinking Water Regulations and Maximum Contamination Levels (MCLs) for eight volatile synthetic organic chemicals (VOCs)[1] in drinking water are submitted on behalf of the Natural Resources Defense Council (NRDC). NRDC is a national non-profit environmental organization supported by over 50,000 members.

In recent years, NRDC has lead an effort to see drinking water standards established for the myriad of synthetic organic chemicals now plaguing our drinking water supply.[2] We have anxiously awaited the instant proposal to set standards for eight VOCs. Our enthusiasm for today's proposal, however, is tempered, quite naturally, by our frustration with the dilatory pace to which the Agency appears to have adapted in drinking water standard setting, and the extensive list of contaminants that remain unregulated. We note that it has been four years since EPA issued the Advanced Notice of Proposed Rulemaking on fourteen VOCs.[3] Recommended Maximum Contaminant Levels (RMCLs) were proposed on June 12, 1984 for nine of these chemicals,[4] and final RMCLs were released for 8 of them on November 13, 1985, a full 17 months later.[5] Even if final MCLs for this short list of contaminants are promulgated in 1986, they will not become effective until late Spring of 1988, six year after the standard setting process began. This is an unconscionably slow pace when what is at stake is the most basic and critical of needs, pure drinking water.

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[1] Trichloroethylene; carbon tetrachloride; 1,1,1-trichloroethane; vinyl chloride; 1,2-dichloroethane; benzene; 1,1, dichloroethylene; and p-dichlorobenzene.

[2] According to a 1983 EPA study, Groundwater Supply Survey (GWSS), over 21% of groundwater systems have detectable levels of VOCs.

[3] 47 Fed. Reg. 9350 (March 4, 1982).

[4] 49 Fed. Reg. 24330 (June 12, 1984).

The contamination of drinking water by VOCs has long been considered a significant problem. Indeed, Congress recognized the danger posed by exposure to toxic chemicals in drinking water when it passed the Safe Drinking Water Act (SDWA) in 1974. The Act adopts a strong preventive approach by requiring the Administrator of the EPA to issue regulations (maximum contamination levels) for "each contaminant which in the Administrator's judgment...may have any adverse effect on the health of persons."[6] (Emphasis added). Thus, it was the intent of Congress that EPA resolve uncertainties in favor of protecting public health. Such an approach helps to ensure that the public is not placed at continued risk of disease due to the consumption of chemically contaminated drinking water before there is conclusive proof of hazard. To permit such exposure would be contrary to accepted preventive public health policy, and would impose an unacceptably high social cost in terms of human pain and suffering.

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[5] 50 Fed. Reg. 46880 (November 13, 1985).

[6] 42 U.S.C.A. §300g-1(b)(1)(B)(1982).

With the instant proposal, EPA is proposing MCLs for eight VOCs. NRDC finds the Agency's proposal to be very comprehensive. A great deal of work has gone into this effort and the Agency is to be commended. In our review of the proposal, however, we identified several problems and would like to make the following recommendations:

1) EPA should set Recommended Maximum Contaminant Levels at zero for all carcinogens.
2) EPA should set Maximum Contaminant Levels for carcinogens that correspond to an excess lifetime cancer risk of no greater than 1×10^{-6}.
3) EPA should set a maximum total synthetic organic chemicals (TSOC) standard.
4) Under certain conditions, point-of-entry (but not point-of-use) devices could be considered acceptable technology to meet MCLs in a few situations, however, we urge EPA to discourage their use as a permanent solution.
5) EPA should adopt the more stringent monitoring requirements as described in monitoring option 1.
6) All water systems relying on groundwater should be required to sample for vinyl chloride.
7) EPA should determine compliance at the time of each sample.
8) EPA should require states to certify the vulnerability status of water systems.
9) EPA should require utilities to report the results of the unregulated contaminants monitoring program.

Our comments are discussed in detail below:

I. EPA should set Recommended Maximum Contaminant Levels (RMCLs) at zero for all carcinogens.

EPA recently finalized an RMCL for 1,1-dichloroethylene of 7 ug/L and is proposing an MCL of 7 ug/L in the instant proposal.[7] EPA developed the RMCL using only non-carcinogenic evidence and did not take into account some experimental evidence of carcinogenicity and "sufficient" mutagenicity data.[8] This approach to carcinogens is inconsistent with the protective guidance on setting RMCLs provided by Congress when SDWA was passed. The legislative history clearly states Congress' intent that RMCLs for carcinogens be set at zero.[9] We, therefore, object to EPA's setting the RMCL for 1,1-dichloroethylene at any level other than zero.

As we have discussed in earlier comments to EPA,[10] NRDC has serious problems with the EPA approach to carcinogens, which is described in detail in the final rule, "RMCLs for Volatile Organic Chemicals."[11] According to the scheme, which classifies carcinogens by weight of existing evidence, EPA has set zero RMCLs only for those compounds with "sufficient" evidence of carcinogenicity. For substances, such as 1,1-dichloroethylene, for which there is only "limited" evidence of carcinogencity, non-zero RMCLs have been set. This system of classifying contaminants is derived from EPA's Proposed Guidelines for

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[7] 50 Fed.Reg. 46880 (November 13, 1986); 50 Fed. Reg. 46902 (November 13, 1985).

[8] "Sufficient" in accordance with International Agency for Research on Lancer (IARC) criteria.

[9] H.R. No. 93-1185, 93rd Cong. 2nd Sess. 20(1974).

[10] Letter from Jacqueline Warren and Frederica Perera to Comment Clerk, Criteria and Standards Division, Office of Drinking Water (WH-550) U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C., 20460, December 24, 1985.

[11] 50 Fed. Reg 46884-46889 (November 13, 1985).

Carcinogen Risk Assessment (November 23, 1984), which, in turn, were drawn largely from the IARC system to characterize the quantity and quality of epidemiological and experimental data on a chemical. The IARC categories have no regulatory implications. Unfortunately, EPA simplistically converted a non-regulatory system for categorizing data into a rigid regulatory scheme.

The cases of tetrachloroethylene and methylene chloride illustrate the arbitrary and inadequately protective nature of a regulatory scheme based on levels of evidence. As of the date EPA proposed RMCLs for tetrachloroethylene and 8 other VOCs, June 12, 1984, there was only "limited" evidence of carcinogenicity in laboratory animals on tetrachloroethylene.[12] However, as a result of the National Toxicology Program (NTP) bioassay, tetrachloroethylene now has sufficient or "clear" evidence of carcinogenicity.[13] Likewise, methylene chloride, a drinking water contaminant not being proposed for regulation today, when tested in four bioassays between 1980 and 1984, gave only "limited" evidence, including benign mammary tumors in rats and liver tumors in mice.[14] The fifth study (NTP, 1985) provided "clear" evidence with these same tumors. These examples underscore the shortcomings of using the weight of evidence classification scheme for purposes of regulation. Rather than erring on the side of safety, as Congress intended, this short-sighted approach to what clearly are "moving targets" resolves uncertainty as to carcinogenicity in favor of the chemicals.

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[12] 49 Fed. Reg. 24341 (June 12, 1984).

[13] National Toxicology Program, Report on the Toxicology and Carcinogenesis Studies of Tetrachloroethylene in Rats and Mice, Board Draft. Research Triangle Park, North Carolina. August 1985.

[14] U.S. Environmental Protection Agency, Office of Toxic Substances, Analysis of the Applicability of TSCA §4(f) to Methylene Chloride. May 1985.

Now, the evidence on 1,1-dichloroethylene is coming in. Since EPA published its final RMCLs on November 13, 1985, an EPA Science Advisory Board workshop reviewed results of a recently published study on 1,1-dichloroethylene and concluded that there were increases in kidney, mammary, and lung tumors in mice and possibly in leukemias in rats.[15] Clearly, there is no scientific support for the assumption that "limited" evidence indicates a lower risk to humans, nor is such an assumption consistent with the preventive approach embodied in the Safe Drinking Water Act.

In sum, NRDC strongly objects to the RMCL for 1,1-dichloroethylene as finalized. Moreover, with an RMCL of zero, the MCL of 7 ug/L proposed by EPA, for this contaminant is too high. We recommend that EPA set the MCL at 1 ug/L and over time bring it down to a level that corresponds to an excess cancer risk of 1×10^{-6} or below, as treatment and analytical techniques improve. (This recommendation is discussed in more detail in Section II below.)

II. EPA should set MCLs for carcinogens that correspond to an excess lifetime cancer risk of no greater than 1×10^{-6}.

Guided by the strong preventive approach of the SDWA and

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[15] EPA SAB Workshop, November 21, 1985.

EPA's own statement that "[c]arcinogens should not be present in drinking water,"[16] we urge the Agency to set MCLs for carcinogens at a level that corresponds to an excess lifetime cancer risk that is no greater than 1 x 10^{-6}. Salient reasons for such a protective stance are (1) the involuntary and universal nature of human consumption of drinking water, (2) the legitimate expectations by the public that drinking water quality should be carefully guarded by government and of the purest quality, and (3) the assumption of at least additive risks from numerous compounds to which people are simultaneously and sequantially exposed.[17] Thus, for example, a general excess risk level of $1x10^{-6}$ per person for only one compound, when encountered additively through exposure to a hundred compounds, produces an increased risk level of $1x10^{-4}$ or greater for each person, and an additional case of cancer for each ten thousand people exposed throughout their lives to these levels.[18]

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[16] 49 Fed.Reg. 24347 (June 12, 1984).

[17] Wendy Gordon, Judith Klotz and Jacqueline Warren. Comments of the NRDC on the U.S. Environmental Protection Agency's Proposed Recommended Maximum Contaminant Levels for Volatile Organic Compounds in Drinking Water (Sept. 10, 1984).

[18] It is impossible to quantify the number of carcinogens a person is exposed to because of the many unknowns. However, it is highly possible that the cumulative exposure may be substantial. There are currently 30 established human carcinogens and several hundred animal carcinogens. Moreover, the vast majority of the approximately 50,000 chemicals in commercial use have not been tested for carcinogenicity. If it were that only a small fraction of these prove to be carcinogenic, an individual's cumulative exposure could well exceed one hundred carcinogens. Standards must be set to account for these simultaneous exposures.

For the six carcinogens in the instant proposal rule, the MCL should therefore be no greater than:

Compound	Concentration in drinking water (ug/L) that corresponds to an excess cancer risk of $1x10^{-6}$*
Trichloroethylene	2.6
Carbon tetrachloride	0.27
Vinyl chloride	0.015
1,2-dichloroethane	0.38
Benzene	1.3
1,1-dichloroethylene	0.061

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* Based on CAG data. 50 Fed.Reg. 46883 (Nov. 13, 1985).

According to the Safe Drinking Water Act (SDWA), MCLs are to be set "as close to" the RMCLs "as is feasible." The term "feasible" means "feasible with the use of the best technology, treatment techniques and other means, which the Administrator finds are generally available (taking costs into consideration)." Section 1412(b)(3). The Act also makes clear that, for the purpose of compliance monitoring, MCLs should be set at a level that is economically and technically feasible to ascertain... in water in public water systems." Section 1401(1)(C). At present, VOCs can be detected down to 1 ug/L using analytical methods that are economically and technically feasible. (See discussion below.) Since treatment techniques appear to achieve reductions down below 0.1 ug/L, analytical detection capabilities appear to be the limiting factor in setting MCLs. However, for only two of the six carcinogenic VOCs in the proposed rule does 1 ug/L correspond to an excess lifetime cancer risk of less than 1×10^{-6}. For all others, still lower levels are needed.

To achieve levels less than 1 ug/L requires improved analytical capabilities. We believe the Agency should be responsible for forcing analytical detection limits downward until they fall below the 1×10^{-6} cancer risk levels. We suggest EPA work with the New Jersey Department of Environmental Protection which is mandated to set standards at the 1×10^{-6} cancer risk level for all carcinogens in drinking water.

A. EPA's Proposed MCLs

The Agency is proposing the following MCLs for the six carcinogens:

Compound	RMCLs mg/L)	MCL (mg/L)	Cancer Risk Estimate corresponding to concentrations of 0.005 mg/L in drinking water
Trichloroethylene	0	0.005	2×10^{-6}
Carbon tetrachloride	0	0.005	2×10^{-5}
Vinyl chloride	0	0.001	3.3×10^{-4}
1,2-dichloroethane	0	0.005	1.3×10^{-5}
Benzene	0	0.005	3.8×10^{-6}
1,1-dichloroethylene	0.007	0.007	8.2×10^{-5}

These levels neither satisfy the SDWA mandate nor meet the suggested maximum acceptable cancer risk level of 1×10^{-6}.

EPA based its MCL determinations on the following factors:[19]

- Availability and cost of analytical methods with required scope, sensitivity and reliability;
- The availability and performance of treatment technologies and other factors relative to feasibility;
- An assessment of the cost of the application of technologies to achieve various concentrations; and

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[19] 50 Fed. Reg. 46904, 46916 (November 13, 1985).

- Levels of VOC occurrence.

By EPA's own account, VOC concentrations in drinking water can be reduced routinely to 1 ug/L (0.001 mg/L) or lower with the use of best technology generally available (BTGA).[20] To achieve these concentrations is not significantly more costly to a system, regardless of the system size, than to treat to a lesser degree. In other words, the basic cost of implementing a change in water treatment, to a supplier, whether it be large or small, is not very sensitive to the treatment removal efficiency.[21] This, in turn, means that the cost to each household within the water supply system does not change significantly if the MCL were 1 ug/L or if it were 5 ug/L.

If the best treatment technologies generally available can routinely reduce VOC concentrations in drinking water to 1 ug/L or below, the basis for EPA proposing MCLs of 5 ug/L for trichloroethylene, carbon tetrachloride, 1,2-dichloroethane, benzene, and 1,1-dichloroethylene must be the analytical quantitation limits. Indeed, EPA argues that it is proposing MCLs of 5 ug/L for these compounds because this represents the lowest achievable level of analytical quantitation during routine lab operating conditions within specified limits of precision and accuracy, or the "practical quantitation level" (PQL).[22]

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[20] 50 Fed. Reg. 46917 (November 13, 1985). According to EPA, "two technologies, packed tower aeration and granular activated carbon (GAC) adsorption, are specifically suitable for VOC control, have high theoretical and empirically determined removal efficiencies (90-99% or more), have been used by drinking water systems in the U.S., and their costs are reasonably affordable when used by large systems. These technologies are thus considered best technologies generally available (BTGA) for determination of the MCLs.

[21] See Table 17 at 50 Fed. Reg. 46927 (November 13, 1985). What is affected by the level of contaminant reduction to be required by the regulation is the number of systems that would need to install treatment. At an MCL of 1 ug/L, almost 3 times as many systems would have to implement treatment than if the MCL was 5 ug/L.

B. Shortcomings with EPA's Proposed MCLs

NRDC reviewed EPA's argument as it is described in its June 1985 "Volatile Organic Chemicals: Methods and Monitoring Document"[23] and found the data EPA provided does not support MCLs of 5 ug/L for trichloroethylene, carbon tetrachloride, 1,2-dichloroethane and benzene, nor does it support an MCL of 7 ug/L for 1,1-dichloroethylene. One ug/l appears to be practical. Part of the Agency's argument rests on the recommendation made in a report by Glaser et. al. that "[i]f the level of analyte in the sample is below the determined method detection limit (MDL)[24] or does not exceed 10 times the MDL of the analyte in regent water, no measured value is reported.[25] As EPA acknowledges, "Glaser's recommendation was based on experience with wastewater. Since drinking water samples tend to be cleaner samples, a somewhat lower factor may be reasonable for reporting a measured value."[26]

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[22] 50 Fed. Reg. 46906 (November 13, 1985).

[23] U.S. Environmental Protection Agency, Criteria and Standards Division. Volatile Organic Chemicals: Methods and Monitoring Document. Draft. June 1985. Appendix C. (Hereinafter cited as Methods/Monitoring Document).

[24] The method detection limit (MDL) is defined as the minimum concentration of a substance tha can be measured and reported with 99% confidence that the true value is greater than zero. 50 Fed.Reg. 46906 (Nov. 13, 1985).

[25] J.A. Glaser, et. al. Env. Sci. and Tech., Vol. 15, No. 12, pp. 1426-1435.

EPA also looks at the upper confidence limit for the MDL as a means of identifying the PQL. Glaser et. al. found that the upper 95% confidence limits of the MDL was 2.2 times the MDL. Thus, the EPA argues that from a theoretical standpoint, a measured value should not be reported if it is less than 2.2 times the MDL. However, for each of the 4 VOCs in question - benzene (MDL = 0.2 ug/L), carbon tetrachloride (MDL = 0.2 ug/L), 1,2-dichloroethane (MDL = 0.3 ug/L), trichloroethylene (MDL - 0.2 ug/L) and 1,1-dichloroethylene (MDL = 0.2 ug/L) -- 2.2 times the MDL will yield values under 1.0 ug/L. The values will be 0.44 ug/L for all but 1,2-dichloroethane for which the value becomes 0.66 ug/L.

In sum, EPA's own criteria do not support PQLs of 5 ug/L as it is proposing. Rather, NRDC argues that the PQL is somewhere around 1 ug/L for the 6 VOCs of concern. This theoretical estimate appears to match the real quantitation limits as found by operating analytical laboratories.

NRDC surveyed 9 reputable analytical laboratories capable of VOC quantitation and received unanimous agreement that the quantitation limit is 1 ug/L. We asked the laboratory managers or a qualified spokesperson for the lowest achievable level of analytical quantitation for the five VOCs of interest: trichloroethylene, carbon tetrachloride, 1,2-dichloroethane, benzene and 1,1-dichloroethylene. Two conditions were given:

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[26] U.S. Environmental Protection Agency, Methods/Monitoring Document, Appendix C-2.

the water to be tested was to be drinking water and thus essentially clean water, and the quantitation limit of interest was to be that achieved under routine operating conditions. We then asked for the interval of precision and accuracy that they consider acceptable at concentrations under 10 ug/L. Six of the laboratories were also asked about the analytical costs associated with the anlysis of VOCs in drinking water assuming a quantitation limit of 1 ug/L. All quoted costs that fall within the range EPA gives in the proposed rule, $50 - $300. For results of the survey, see the table attached.

The results clearly show that, without exception, every lab surveyed could detect these five VOCs in drinking water at concentrations of 1 ug/L under routine operating conditions well within limits of precision and accuracy of plus or minus 40%, if not better, (where the laboratories felt they could describe precision and accuracy this way).[27] Moreover, it appears that the analytical costs would not change if the quantitation level were 1 ug/L or if it were 5 ug/L.

The findings of our survey cast serious doubt on the basis for EPA's proposal to set MCLs for trichloroethylene, carbon tetrachloride, 1,2-dichloroethane, benzene, and 1,1-dichloroethylene at any level greater than 1 ug/L. They challenge EPA's principal argument that 5 ug/L represents the lowest level achievable by good laboratories within specified limits under routine operating conditions and therefore that it is the lowest possible value for the MCLs.

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[27] Mead Compu-Chem did not feel precision and accuracy could be described using this criterion alone.

NRDC recommends that EPA set the MCLs for these five VOCs at 1 ug/L. In so doing, the Agency would be satisfying the SDWA mandate requiring that MCLs be set "as close to" the RMCLs (which in the case of these five chemicals is zero) "as is feasible" using the best technology generally available, taking into consideration the cost of treatment as well as the cost and technical feasibility of analyzing for these chemicals. Moreover, we urge the Agency to lower the MCLs to the 1×10^{-6} cancer risk level or lower, wherever possible, by expediting an effort to see improvements made in analytical capabilities.

III. EPA should set a total synthetic organic compounds (TSOCs) standard.

Standards for organic chemicals in drinking water should at a minimum be set so as to minimize consumer exposure to the extent practical. To this end, NRDC recommends that EPA establish a standard for total synthetic organic chemicals (TSOCs).[28]

A TSOC standard will address the problem of multiple exposures associated with setting separate standards for each individual drinking water contaminant. As EPA noted in its RMCL proposal for VOCs, multiple exposure is "a major problem."[29] Exposure to multiple organic contaminants poses considerable risk from the additive as well as possibly synergistic effects. The Agency points to the situation wherein the contaminants' concentrations are only slightly beneath their respective MCLs; the system technically would be in compliance and yet the overall exposure levels could be quite high.

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[28] EPA asked for comments on a total standard for organics in its Proposed Recommended Maximum Contaminant Levels for Volatile Organic Compounds in Drinking Water. 49 Fed. Reg. 24330 (June 12, 1984).

A TSOC standard should be set at a level which is reasonably achievable using generally available technology. NRDC believes the evidence supports a TSOC standard of 100 ppb. As EPA notes, best technology generally available can achieve, under routine operating conditions, 99+% removal efficiency on a wide range of organic contaminants.[30] The organic contaminant concentration would have to exceed 10,000 ppb for the standard not to be achievable with a 99% removal efficiency.[31] Moreover, treatment methods can be altered to achieve even greater contaminant reduction, in the rare case where concentrations exceed 10,000 ppb.

If a TSOC standard of 100 ppb is set, the proposed MCLs for p-dichlorobenzene and 1,1,1-trichloroethane are rendered irrelevant. However, as noted in our comments on EPA's RMCL proposal, the RMCLs EPA was then proposing for these two contaminants and has now finalized, and the MCLs it is proposing in the instant proposal are excessive.[32] Indeed, according to Michael Burke, Director of the Bureau of Public Water Supply Protection of the New York State Department of Health," the existence of these chemicals in a water supply at the proposed levels would constitute in our minds, gross contamination."[33] It is now New York State's policy not to allow total organic chemical concentrations in drinking water to exceed 100 ug/L.[34]

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[29] 49 Fed. Reg. 24347 (June 12, 1984).

[30] 50 Fed. Reg. 46912 (November 13, 1985).

[31] Organic contaminants have rarely been found in drinking water in concentrations exceeding 10,000 ppb. 50 Fed., Reg. 46917 (November 13, 1985).

The proposed MCLs for p-dichlorobenzene and 1,1,1-trichloroethane are not only excessive, they are impractical and contradict the principle, if not explicit, purpose of the SDWA, to minimize consumer exposure to organic chemicals in drinking water. One, the analytical and treatment capabilities for these two chemicals are similar to the six other VOCs in the proposal for which EPA is proposing MCLs in the low ppb range. Consequently, it is feasible to monitor and treat to much lower levels. Second, there is some evidence indicating that 1,1,1-

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[32] Wendy Gordon, Judith Klotz and Jacqueline Warren. Comments of the Natural Resources Defense Council on the U.S. Environmental Protection Agency's Proposed Recommended Maximum Contaminant Levels for Volatile Organic Compounds in Drinking Water. September 10, 1984.

[33] Michael Burke, P.E., New York State Dept. of Health, Testimony on U.S. Environmental Protection Agency Proposed Rulemaking. Volatile Synthetic Organic Chemicals, Maximum, Contaminant Levels. Albany. January 13, 1986. Indeed in New York State surveys, p-dichlorobenzene has never been detected and 1,1,1-trichloroethane has, with only two exceptions, been found at concentrations greater than 10 ug/L.

[34] New York State Dept. of Health, EHM Technical Reference Item pws-69-Organic Chemical Action Steps for Drinking Water. Dec. 12, 1985.

trichloroethane may be a mouse liver carcinogen and that it also may cause cardiac abnormalities.[35] Whether or not this evidence is conclusive, it highlights the fact that a sufficient toxicological data base may not exist for the two VOCs to support a conclusion that the proposed MCLs provide an "adequate margin of safety" as the SDWA requires. Third, even at 50 ug/L, p-dichlorobenzene has an obnoxious smell.[36]

NRDC urges EPA to reconsider the MCLs as proposed for p-dichlorobenzene and 1,1,1-trichloroethane. We would suggest that the standards reflect analytical capabilities, treatability using feasible technologies, the sufficiency of the toxicological data base (erring on the side of caution), and organoleptic considerations. In so doing, we would anticipate that the standards would be set much closer to the limits of quantitation and treatability. As such, they would also be consistent with a TSOC standard.

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[35] See U.S. Environmental Protection Agency, Office of Drinking Water, Draft Health Assessment Document on 1,1,1-Trichloroethane. September 1985. According to this report, the NTP has prepared a draft technical report of a carcinogenesis bioassay of 1,1,1-trichloroethane that found significant increases in hepatocellular carcinomas in male and female mice. This report is currently undergoing an NTP audit and will not be published for at least a year. In addition, Dr. Linda Birnbaum of NTP (Personal Communication, Dec. 1985) notes that an abstract of a 1984 teratogenesis study of 1,1,1-trichlorethane reported significant cardiac abnormalities among pups. Rats were exposed to 10 ppm of 1,1,1-trichloroethane in drinking water one to two weeks prior to mating, throughout gestation, and until weaning. Upon sacrifice, 30% of the pups evidenced cardiac abnormalities. While this was a small study, only six controls and six treated litters, the fact that these effects were seen at very low levels in water is of extreme concern. NTP is currently conducting a similar bioassay to see if the results will be replicated. This finding however, is supported by anecdotal reports of a higher incidence of cardiac abnormalities among children exposed to 1 ppm 1,1,1-trichloroethane in drinking water. See Datson, et al., Teratology, 29:25, 1984.

[36] Michael Burke, supra note 33.

IV. Under certain conditions, point-of-entry (but not point-of-use) devices could be considered acceptable technology to meet MCLs in a few situations, however we urge EPA to discourage their use as a permanent solution.

EPA has determined that point-of-use/point-of-entry devices are not BTGA because "it is difficult to monitor the reliability of treatment performance in a manner comparable to central treatment."[37] However, the Agency believes that GAC adsorption point-of-use/entry treatment devices could be considered acceptable technology to meet MCLs under certain conditions specified below:[38]

(1) Central ownership and control;

(2) Effective monitoring and surveillance equivalent to a monitoring scheme for central water treatment;

(3) Effective technology must be properly applied;

(4) Microbiological safety of water must be maintained;

(5) All consumers are to be protected; and

(6) There must be no significant increase in risk over centrally treated water, including determination if the VOC concentrations are high enough to create a significant risk from dermal and respiratory exposure.

NRDC believes that, under no circumstances, can point-of-use devices be considered acceptable technology to meet MCLs for VOCs

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[37] 50 Fed. Reg. 46915 (November 13, 1985).

[38] 50 Fed. Reg. 46915-46916 (November 13, 1985).

(we are assuming that no household would install point-of-use devices at every tap). By definition, point-of-use devices, installed as faucet-mounted devices or under-the-sink line bypass devices, treat the water at a single tap. Consequently, a household with one device to filter the kitchen water is not protected from respiratory and dermal exposures associated with bathing with VOC contaminated water.[39]

Moreover, NRDC hesitates to support point-of-entry devices as a permanent solution to a drinking water contamination problem. We question whether monitoring and maintenance of the devices within a system will remain at an adequate level over the long term to assure compliance with the MCLs. In addition, we would not be surprised to find that the cost of managing this decentralized system in accordance with EPA's conditions outlined above, would quickly exceed the cost of establishing a central treatment facility. NRDC believes that the best application for point-of-entry devices would be as an interim measure to prevent an unreasonable risk during the time between detection of contamination and the installation of central treatment.

Central ownership of point-of-entry devices may not be necessary to ensure compliance with the MCLs. Devices could be leased to the utility along with a full service contract with the lessor. Thus, whereas it is important that the utility retain its central responsibility in ensuring that all devices are being maintained and their effectiveness regularly monitored. There is no reason why it should own all the devices.[40]

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[39] In the paper, Halina S. Brown, et. al. The Role of Skin Absorption as a Route of Exposure for Volatile Organic Compounds (VOCs) in Drinking Water, AJPH May 1984, Vol. 74, No. 5, the authors discuss the significant contribution of skin penetration by solvents to the total exposure to VOCs found in drinking water.

V. EPA should adopt the more stringent monitoring requirements as described in monitoring option 1.

EPA is proposing compliance monitoring requirements for the purpose of determining if public water systems are distributing drinking water that meets the MCLs for the 8 VOCs in the proposed rule. In addition, the Agency is proposing monitoring requirements for other VOCs that are "unregulated". In the instant proposal, EPA considers three approaches to monitoring requirements. In brief, option 1 has the maximum level of federally mandated monitoring requirements and gives states the least discretion. EPA prefers option 2 under which the federally mandated monitoring requirements would be less stringent than under option 1.

NRDC prefers option 1 to option 2 for the following reasons:

1) Option 1 requires confirmation samples for all positive samples. Option 2 gives states discretion on requiring confirmation samples. Given the variability of VOCs in raw water of 50-100%, all positive samples should be confirmed.[41]

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[40] Personal communications with Donna Cirolia, Water Quality Association, Washington, D.C. February 6, 1986.

[41] 50 Fed. Reg. 46917 (November 13, 1985).

2) Option 1 does not allow states to reduce the initial number of samples to one sample for any reason. Option 2 would give states such discretion if the one sample taken came from a system that did not contain any VOCs and was not considered vulnerable to contamination. Vulnerability to VOC contamination, however, does not appear to be readily determined. Indeed, "a clear distinction between potential sources of contamination and actual VOC contamination that could be used to pinpoint specific systems that would be vulnerable to VOC contamination" has not been shown, according to EPA's own studies.[42]

3) Option 1 requires all systems to repeat the monitoring for the unregulated VOCs in 10 years. In contrast, under option 2, repeat monitoring for unregulated VOCs would be at state discretion. Repeat monitoring for unregulated contaminants is necessary because, as EPA notes, the unregulated contaminants in the program are those that have been detected or are likely to occur in drinking water and that have not been ruled out as posing no adverse health risk.[43] In other words, the unregulated VOCs listed were not randomly or arbitrarily selected.

Option 1 can be changed, however, in certain ways that may make it more flexible and less stringent. One, the repeat monitoring requirement in option 1 could be made more flexible if EPA were to establish a scheme for states to add and delete unregulated VOCs from the list to be monitored. NRDC recommends that the list of unregulated chemicals be revised every 2 years and that monitoring for any new chemicals be performed within 3 years of being added to the list and then every 10 years thereafter, unless the chemical has been deleted from the list. Deletions can be made following the second round of monitoring and should be made conservatively, taking into account the contaminant's past occurrence patterns, permanent changes in its use, whether or not it is a breakdown product of another substance, the vulnerability of the water supply, and the existence of successful aquifer protection regulations and practices.

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[42] 50 Fed. Reg. 46920 (November 13, 1985).

[43] 50 Fed. Reg. 46923 (November 13, 1985).

NRDC would also change option 1 so that if VOCs are detected, repeat monitoring would be required quarterly rather than monthly. Quarterly monitoring is the frequency required under option 2.

Moreover, NRDC agrees with EPA's intention to allow states to reduce the repeat monitoring requirements for vulnerable systems that have detected VOCs at levels less than the MCLs to no less frequently than once a year after a baseline of data is developed. A minimum of three years of quarterly sampling appears to be adequate to establish the baseline. However, we would suggest, given the high variability of VOCs in raw water (as noted above, EPA considers a 50-100% variation in raw water concentration to be a reasonable estimate), that the VOC levels detected should not be allowed to exceed 25% of the respective MCLs in order for the monitoring requirement to be reduced. This would leave a margin of error great enough to ensure that the MCLs were not being exceeded.

VI. All water systems relying on groundwater should be required to sample for vinyl chloride.

EPA is proposing to require groundwater systems to analyze for vinyl chloride only when other chlorinated 2-carbon VOCs (trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, and 1,1-dichloroethylene) had been detected. The Agency has concluded that the most likely explanation for vinyl chloride detection in groundwater is from in-situ transformation.[44]

NRDC has reviewed the supporting document for EPA's proposal.[45] Whereas there seems to be strong evidence supporting the possibility that vinyl chloride is a biotransformation product of other VOCs, that this is the only reason for its presence in drinking water remains unproven. In order to make the latter proof, it is necessary to identify other possible sources of vinyl chloride releases to the environment and ensure that they cannot be responsible for drinking water contamination. Until this supporting information has been gathered, NRDC would advise against reducing the monitoring requirements for vinyl chloride, the most potent VOC being regulated in the instant proposal.[46]

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[44] 50 Fed. Reg. 46919-46920 (November 13, 1985).

[45] Science Applications International Corporation, Summary of Available Information Related to the Occurrence of Vinyl Chloride and Groundwater as a Transformation Product of other Volatile Organic Chemicals. EPA Contr. No. 68-01-7166. October 19, 1985.

VII. EPA should determine compliance at the time of each sample.

EPA intends to determine compliance with MCLs by averaging the quarterly values for each sampling point at the end of one year for each source. If the average for any source is above the MCL, that system shall be considered out of compliance.[47] NRDC vehemently opposes EPA's proposal to average the sampling results over a year. Such a proposal may mask the degree of contamination by allowing averaging over time.

NRDC believes drinking water must be able to meet the standards at any point in time. To this end, the Agency should determine compliance at the time of each sample. Positive samples should be confirmed. If the average of the two samples exceed the MCL, the entire system should be considered out of compliance.

VIII. EPA should explicitly require states to review and certify the vulnerability status of water systems.

EPA briefly remarks in the proposal that states should recertify the vulnerability status of systems.[48] NRDC believes a program to certify, review and recertify the vulnerability status of water supplies could be very valuable and that EPA should make this program a part of the regulation.

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[46] The lifetime cancer risk estimate corresponding to the consumption of 2 liters of water containing the cancer risk estimates for 1 ug/L of vinyl chloride by a 70 kg. male throughout his lifetime is 6.7×10^{-5}, almost two orders of magnitude higher than the other VOCs. See Table 2, 50 Fed. Reg. 46883 (November 13, 1985).

[47] 50 Fed. Reg. 46921 (November 21, 1985).

To this end, the EPA should establish a guidance for states to use in certifying a water supply's vulnerability to contamination. EPA has begun developing such a guidance and has identified three general criteria describing vulnerability that are to be used by states and EPA in prioritizing systems in implementing the monitoring schedule and to determine the frequency of repeat monitoring: proximity to population centers, nearby uses of VOCs and protection of water sources.[49]

States should review and recertify the water supplies every 3 years. However, systems should be required to notify states whenever a significant change takes place that could affect the vulnerability of the system (e.g., change in water source, new VOC based industry nearby or a positive VOC analysis).

NRDC reiterates its concern that the vulnerability status of an aquifer with regard to VOC contamination is somewhat equivocal. Moreover, without complete information on past VOC use patterns, a determination on vulnerability is clearly limited in its usefulness. Consequently, as discussed above, an aquifer's vulnerability status should not be used as the sole trigger for reductions in monitoring requirements. Such decisions must be well supported by the results of occurrence monitoring over a period of time.

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[48] 50 Fed. Reg. 46919 (November 13, 1985).

[49] See EPA, Methods/Monitoring Document, Appendix A.

IX. EPA should require utilities to report the results of the unregulated contaminants monitoring program.

Section 1413 of SDWA provides authority for EPA to require public notification of the results of monitoring for unregulated contaminants and is less specific than Section 1414 which pertains to noncompliance. This allows EPA some flexibility in prescribing the form and content of the public notification. In my view, the notice the suppliers send should give specific detail on the contaminants monitored, the results, and the anticipated health significance of the contaminants present, if any.

Consumer should be notified by written notice in their water bills. However, if water bills are not issued or the next bills are not to be sent within two weeks of the date the suppliers receive the results of the last sampling, the water bill notice should be supplemented with a notice in the newspaper. Repeat notices should be sent out with the next two water bills.

Often, apartment dwellers do not receive water bills; their rent covers all utilities. In such cases, the building manager should be required to post the notices in a central location.

Other Comments

Several other sections of EPA's proposal are noteworthy but do not require lengthy discussion. NRDC commends the Agency for the following:

1) EPA's proposal to allow the use of bottled water as an emergency or interim measure to prevent an unreasonable risk during time between detection and compliance.

2) Its intention to amend the definition of community water systems so as to include such systems as schools and factories.

3) Its proposal to compile a nationwide file on the occurrences and levels of unregulated contaminants by requiring all states receiving monitoring data to submit it to EPA.

Conclusions

NRDC welcomes this long-awaited proposal to set MCLs for eight VOCs now found in a considerable number of water supply systems. Adding these compounds to the current list of regulated drinking water contaminants draws us closer to our goal of minimizing consumer exposure to toxic substances in our water supplies. However, in so far as the Safe Drinking Water Act requires that the lowest feasible standards be set, EPA falls far short of its mandate. To correct for the shortcomings, NRDC suggests the following changes be made in the proposed rule:

1) The RMCL for 1,1-dichloroethylene, a potential carcinogen, should be set at zero.

2) The MCLs for trichlorethylene, carbon tetrachloride, 1,2-dichlorethane, benzene and 1,1-dichloroethylene should be set at 1 ug/L.

3) EPA should establish a program for improving analytical capabilities and treatment technologies so that ultimately MCLs for carcinogens can be reduced to a level that corresponds to an excess cancer risk level of no greater than 1×10^{-6}.

4) An MCL for total synthetic organic compounds should be set.

In addition we recommend the following:

5) Under certain conditions, point-of-entry (but not point-of-use) devices could be considered acceptable technology to meet MCLs in a few situations, however, we urge EPA to discourage their use as a permanent solution.

6) EPA should adopt the more stringent monitoring requirements as described in monitoring option 1.

7) All water systems relying on groundwater should be required to sample for vinyl chloride.

8) EPA should determine compliance at the time of each sample.

9) EPA should require states to certify the vulnerability status of water systems.

10) EPA should require utilities to report the results of the unregulated contaminants monitoring program.

Phone Survey of Reputable Commercial Analytical Laboratories with VOC Quantitation Capabilities

Laboratory	Detection Limit under routine operating conditions	Precision/ Accuracy Limits	Costs
ENSECO Alewife Brook Pkwy. Cambridge, MA 617-661-3111 Contact: Nancy Stewart Lab Mgr.	1ppb	± 25% (All concentrations)	$90-175
Malcolm Pirnie Inc. 2 Corporate Plaza P.O. Box 751 White Plains, NY 914-694-2100 Contact: Bill Drago Lab Mgr.	1ppb	±15% (concentrations < 10ppb) ±10% (concentrations >10ppb)	
Zimpro, Inc. Military Rd. Rothschild, WI 715-359-7211 Contact: Jim Barr	1ppb	±20% (concentrations < 10ppb) ±10% (concentrations >10ppb)	
Princeton Testing Co. U.S. Route 1 Princeton Service Cntr. (P.O. Box 3108) Princeton, NJ 08543 604-452-9050 Contact: Bill Sherman	1ppb	±20% (<10ppb) ±10% (>10ppb)	$125-175
I.T. Analytical Svcs. Knoxville, Tenn. 615-588-6401 Contact: Alice Moore	1ppb		$280
Mead Compu-Chen Research Triangle Park North Carolina 919-549-8263 Contact: John Kearns	1ppb		

Laboratory	Detection Limit under routine operating conditions	Precision/ Accuracy Limits	Costs
Environmental Testing & Certification Corp. 284 Raritan Center Pkwy. Edison, NJ 08837 201-225-6747 Contact: Lynne Buzzi	1ppb		$150-264
Nanco Laboratories Unity St. Rte. 376, P.O. Box 10 Hopewell Junction, NY 12533 914-221-2488 Contact: Richard Gerbes	1ppb	±10%(1-200ppb)	$100-250
New York Testing Laboratory 81 Urban Avenue Westbury, NY 718-297-1449 Contact: Frank Gusman	1ppb	±10% (<10ppb) ±10% (>10ppb)	$100

*Each laboratory manager or qualified spokesperson was asked for the lowest achievable level of analytical quantitation for trichloroethylene carbon tetrachloride, 1,2-dichloroethane, benzene, and 1,1-dichloroethylene, assuming the water is drinking water, and thus essentially "clean", and the testing was being performed under routine operating conditions. Also requested was the interval of precision and accuracy when testing for these VOCs at concentrations under 10ug/L and at concentrations above 10ug/L. Six labs were asked to provide a range of costs for VOC analysis.

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COMMENTS
OF THE
NATURAL RESOURCES DEFENSE COUNCIL, INC.
ON THE
U.S. ENVIRONMENTAL PROTECTION AGENCY'S
PROPOSED RECOMMENDED MAXIMUM CONTAMINANT LEVELS FOR SYNTHETIC ORGANIC CHEMICALS, INORGANIC CHEMICALS AND MICROBIOLOGICAL PARAMETERS

50 FEDERAL REGISTER 46936
(NOVEMBER 13, 1985)

May 5, 1986

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INTRODUCTION

These comments are submitted by the Natural Resources Defense Council (NRDC), and address the U.S. Environmental Protection Agency's (EPA) proposed rule to establish Recommended Maximum Contaminant Levels (RMCLs) for synthetic organic chemicals, inorganic chemicals and microbiological parameters under the Safe Drinking Water Act. NRDC is a national, non-profit environmental organization supported by over 60,000 members and contributors.

In recent years, NRDC has worked for the establishment of drinking water standards for the broad range of toxic chemicals that are present in our drinking water supplies. We submitted extensive comments on EPA's advance notices of proposed rulemaking on organics and other contaminants, and on the Agency's proposal to regulate volatile synthetic organic chemicals in drinking water. We also eagerly awaited the instant proposal to establish RMCLs for synthetic organic and inorganic chemicals.

Toxic contamination of drinking water has long been considered a significant problem. Indeed, Congress recognized the danger posed by exposure to toxic chemicals in drinking water when it passed the Safe Drinking Water Act (SDWA) in 1974. The Act adopts a strong preventive approach by requiring the Administrator of the EPA to issue regulations (maximum contaminant levels) for "each contaminant which in the Administrator's judgment...may have any adverse effect on the health of persons."[1]

Standard setting under the SDWA is a two stage process. First, EPA must evaluate available scientific data on health effects and propose a recommended maximum contaminant level (RMCL). RMCLs are health based goals, not standards, and are not intended to reflect feasibility of compliance. The RMCLs are to be set at levels which will prevent any known or anticipated adverse health effects with an adequate margin of safety:

> The incorporation of an adequate margin of safety is not to be confused with the anticipation of adverse health effects. Recommended maximum contaminant levels are to be established by a three-step process. First, the known adverse health effects of contaminants are to be compiled. Second, the Administrator must decide whether any adverse effects can be reasonably anticipated, even though not proved to exist. It is at this point that the Administrator must consider the possible impact of synergistic effects, long-term and multi-media exposures, and the existence of more susceptible groups in the population. Finally, the recommended maximum level must be set to prevent the occurrence of any known or anticipated adverse effect. It must include an adequate margin of safety, unless there is no safe threshold for a contaminant. In such a case, the recommended maximum contaminant level should be set at the zero level.[2]

These considerations reflect Congress' intent that RMCLs are to be preventive. RMCLs are not enforceable limits; rather, they are goals which EPA must seek to attain in the second stage of the process when the enforceable MCLs are established.

The legislative history of the Safe Drinking Water Act unambiguously demonstrates that Congress intended EPA to apply preventive evidentiary standards in establishing RMCLs. The House Report emphasizes that[3]

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[1] 42 U.S.C.A. §3009-1(b)(1)(B)(1982) (emphasis added).

[2] H.R. Rep. No. 93-1185, 93rd Cong., 2d Sess. 20 (1974), hereinafter cited as "House Report").
[Cont. next page.]

> [t]he Committee did not intend to require conclusive proof that a contaminant *will* cause adverse health effects as a condition for a regulation of a suspect contaminant. Rather, all that is required is that the Administrator make a reasoned and plausible judgment that a contaminant *may* have such an effect. Moreover, the contaminant need not have the adverse effect directly in order for the Administrator to regulate it as a primary contaminant. If...it may contribute to such effect, the contaminant should be controlled under primary regulations.

Of major significance for all of EPA's health-based standard-setting under the Safe Drinking Water Act, the Administrator must resolve uncertainties in favor of protecting public health. In 1974, Rep. Rogers summarized the intent of Congress as follows:[4]

> We cannot afford to wait 20 years for health effects research to be completed to begin controlling contaminants which there is some basis to believe endanger public health. *If there are uncertainties, they must be resolved on the side of protection of health*.

Congress reiterated this clear policy in the recent Report on the House version of the Safe Drinking Water Act Amendments of 1985, which states unequivocally that "[i]f the scientific evidence is unclear, the Administrator must err on the side of protecting public health.[5]

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[3] House Report at 10 (emphasis in original), App.,: The Chairman of the House Subcommittee on Health and Environment and floor manager of the bill which became the Safe Drinking Water Act, Rep. Paul Rogers, similarly stressed during the House debate on final passage, "Section 1412 of the Safe Drinking Water Act does not require preponderant proof of a demonstrable health hazard as a precondition for standard-setting. All it requires is a reasoned judgement by the Administrator that a contaminant may pose a threat to human health." 120 Cong. Rec. H10793 (Daily ed. November 19, 1974) (remarks of Rep. Rogers).

[4] 120 Cong. Reg. H10794 (daily ed. November 19, 1974) (emphasis added).

[5] H.R. Rep. No. 98-1034, 99th Cong., 1st See. 22 (1984).

In other proceedings to establish RMCLs, EPA has recognized that its statutory responsibilities include the following requirements and considerations:

1. "Under the SDWA, EPA is charged with setting standards to protect the most sensitive subgroup of a population."[6]

2. "The Safe Drinking Water Act does not require that there be any adverse health effect occurring in the U.S. population as a prerequisite to regulation. Rather, the intent of the Act is to be preventive."[7]

3. "[C]onsistent with the legislative history of the SDWA...conclusive proof is not needed in order to regulate a substance; all that is required is that a judgment be made that a contaminant may have an adverse effect."[8]

4. "[A] contaminant need not have the adverse effect directly in order for the Administrator to regulate it as a primary contaminant.... [I]f it may contribute to such effect, the contaminant should be controlled under the primary regulations.[9]

5. "EPA regulates compounds where there is a possibility of an adverse health effect."[10]

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[6] National Primary Drinking Water Regulations; Fluoride, 50 Fed. Reg. 47142, 47151 (November 14, 1985); National Primary Drinking Water Regulations: Volatile Synthetic Organic Chemicals, 50 Fed. Reg. 46880, 46895. (hereinafter cited as "Final RMCLs for Volatile Organics").

[7] Summary of Comments and Responses from the May 14, 1985 RMCL Proposal [for fluoride], p.2.

[8] 50 Fed. Reg. at 46893 and 46899 (November 13, 1985).

[9] Id. at 46891.

[Cont. next page.]

6. "Requiring widespread occurrence and a significant risk of harm to the public before regulating would not be consistent with the preventive purpose of the statute."[11]

7. "EPA should err on the side of safety in setting [RMCLs]...."[12]

Finally, the legislative history of the Act makes it clear that where there is no "safe" level for a substance, as is the case with carcinogens, the RMCL should be set at zero:

> ...[T]he recommended maximum contaminant level must be set to prevent the occurrence of any known or anticipated adverse effect. It must include an adequate margin of safety, unless there is no safe threshold for a contaminant. In such a case, the recommended maximum contaminant level should be set at the zero level.[13]

NRDC appreciates the extensive research that went into the instant proposal. However, in many respects, the Agency has fallen far short of the protective mandate of the Safe Drinking Water Act. Particularly in the treatment of carcinogens the Agency's proposal departs from previous conservative cancer risk assessment policies and proposes finite RMCLs for a number of carcinogenic contaminants. In our review of the proposed rule we will focus on the treatment of carcinogens. However, we will also raise several concerns about EPA's process of determining RMCLs for non-carcinogens. Finally, NRDC is proposing that EPA set an RMCL for total synthetic organic compounds to protect

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[10] Id. at 46900.

[11] Id. at 46899.

[12] Id. at 46891, 46893.

[13] House Report at 20.

against the additive and synergistic effects of multiple exposures to numerous synthetic organic contaminants.

Our comments raise the following specific issues:

A. Carcinogens

(1) RMCLs for all carcinogens, including those with limited evidence of carcinogenicity, should be set at zero.

(2) EPA fails to consider the carcinogenic risk of certain heavy metals.

(3) Asbestos should be regulated as a carcinogen with an RMCL of zero.

(4) EPA's proposed RMCL for arsenic is inadequate to protect against carcinogenic and non-carcinogenic adverse health effects.

(5) EPA should regulate nitrate as a potential human carcinogen.

B. Non-Carcinogens

(6) In a reversal of earlier policy, EPA ignores organoleptic factors in setting RMCLs.

(7) Greater consistency is necessary in EPA's application of safety factors.

(8) Where the most sensitive endpoint of toxicity is an acute phenomenon, the RMCL should be derived so as to protect the 10 kg child rather than the 70 kg adult.

(9) The sensitivity of a 10 kg child should be a factor in the determination of ADIs based on chronic health effects.

(10) Drinking water should be assumed to contribute no greater than 20 percent of the total daily intake of a contaminant.

(11) EPA must consider all potential routes of human exposure via drinking water and include these factors in its RMCL calculations.

C. Compounds not regulated or regulated less stringently than current interim MCLs.

(12) EPA should establish RMCLs for contaminants in drinking water whenever toxicological data suggest the potential for adverse effects. The Agency should not

establish RMCLs that provide less health protection than current MCLs unless there is a compelling scientific basis for doing so.

D. Total Exposure to Drinking Water Contaminants

(13) EPA should establish an RMCL for total synthetic organic compounds.

PART ONE: TREATMENT OF CARCINOGENS

I. RMCLs For All Carcinogens, Including Those With Limited Evidence of Carcinogenicity, Should Be Set At Zero.

EPA has proposed setting non-zero RMCLs for four chemicals, lindane, styrene, 1,2-dichloropropane and monochlorobenzene, for each of which the Agency claims there is limited evidence of carcinogenicity.[14] Under EPA's previous policy for assessing the risk of carcinogens, the Agency would have regulated these chemicals as probable human carcinogens, with an RMCL of zero.[15] The instant proposal, however, utilizes a less conservative approach, in accord with the Agency's recently proposed scheme to classify carcinogens according to the current weight of evidence.[16]

Adopting the approach developed by the International Agency for Research on Cancer (IARC), a non-regulatory body which categorizes chemicals according to the availability of data concerning carcinogenicity, the EPA classification scheme divides carcinogens into two categories: Category I includes those with "sufficient" evidence (either animal or human) of carcinogenicity;

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[14] National Primary Drinking Water Regulations; Synthetic Organic Chemicals, Inorganic Chemicals and Microorganisms, 50 Fed. Reg. at 46936 (November 13, 1985) (hereinafter cited as "Proposed RMCLs").

[15] See, for example, proposed RMCLs of zero for tetrachloroethylene and 1,1-dichloroethylene, 49 Fed. Reg. at 24330 (June 12, 1984).

[16] 49 Fed. Reg. at 46294 (November 24, 1984).

and Category II includes those with "limited" evidence of carcinogenicity. As outlined in the Proposed RMCLs, the EPA will set zero RMCLs only for Category I chemicals. Category II chemicals will not be regulated as carcinogens, but will be treated somewhat more conservatively than chemicals with no evidence of carcinogenicity.

NRDC objects to the use of a weight of evidence scheme for regulating carcinogens. The categories as developed by IARC were not intended for regulatory use but rather to categorize the quantity and quality of experimental data. Given the rapid pace of testing, the categorization of a chemical can quickly become obsolete, necessitating constant revision if regulations are to remain current. Consequently, a regulation setting scheme based on weight-of-evidence arbitrarily gives long-term regulatory significance to frequently short-lived, artifactual distinctions between carcinogens. Such an approach is not protective of public health, nor is it consistent with the preventive orientation of the Safe Drinking Water Act. Further, it allows less stringent regulation of chemicals for which there is substantial evidence of carcinogenicity.

A. EPA's classification system gives regulatory significance to frequently short-lived distinctions between carcinogens.

Since EPA proposed the classification scheme in 1984, the Agency has initiated efforts to regulate six carcinogens as Category II chemicals under the Safe Drinking Water Act.[17] NRDC has reviewed in the experimental and epidemiological data on three of these chemicals.[18] In all cases, EPA's classification of the chemicals already appears obsolete because of new experimental bioassays either published or peer reviewed within the last two years.

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[17] These six are tetrachloroethylene, 1,1-dichloroethylene, styrene, lindane, 1,2-dichloropropane and monochlorobenzene.

EPA's recent handling of tetrachloroethylene under the Safe Drinking Water Act vividly illustrates the difficulties of using the IARC categories for regulatory purposes, as NRDC has pointed out in previous comments.[19,20] In 1984, EPA proposed zero RMCLs for all carcinogens including those for which there was limited evidence of carcinogenicity, such as tetrachloroethylene.[21] Subsequently, EPA utilized the proposed carcinogen classification scheme and, according to an action memorandum from the Drinking Water Office to the EPA Administrator, drafted a final RMCL for tetrachloroethylene of 10 ug/l.[22] However, before this regulatory decision could be implemented, National Toxicology Program (NTP) bioassay results were published that provided clear evidence of carcinogenicity for tetrachloroethylene.[23] Rather than promulgate either 10 ug/l or zero as originally proposed, the Agency reopened the public comment period on tetrachloroethylene to provide a review of the results of the NTP bioassay.[24] The experience with this contaminant shows the imprudence of basing regulatory decisions on short-lived, arbitrary distinctions among carcinogens.

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[18] As is discussed subsequently, NRDC has reviewed tetrachloroethylene and 1,1-dichloroethylene in previous comments and includes here a detailed review of styrene.

[19] Gordon, W., et al., Comments of the Natural Resources Defense Council, Inc. on U.S. Environmental Protection Agency's National Primary Drinking Water Regulations, Volatile Synthetic Organic Chemicals, Proposed Rulemaking, February 11, 1986.

[20] Letter from Jacqueline Warren and Frederica Perera to Comment Clerk, Criteria and Standards Division. Office of Drinking Water (WH-550) U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, December 24, 1985.

[21] 49 Fed. Reg. at 24330 (June 12, 1984).

[22] Volatile Synthetic Organic Chemicals (VOCs): Promulgation of Recommended Maximum Contaminant Levels and Proposal of Maximum Contaminant Levels - Action Memorandum. From Acting Assistant Administrator for Water to Lee M. Thomas, Administrator, Environmental Protection Agency (excerpts published in Inside EPA, vol. 6, No. 32, p. 1, 10-12 and vol. 6 No. 34 p. 12-13. (1985).

The Agency's experience with 1,1-dichloroethylene is similar. In 1984, EPA originally proposed a zero RMCL based on some experimental evidence of carcinogenicity and "sufficient" mutagenicity data according to IARC criteria.[25] Subsequent to the adoption of the weight of evidence classification scheme, the Agency promulgated a 7 ug/l RMCL in November of 1985, based on non-carcinogenic liver effects with a 10-fold additional safety factor.[26] However, in November of 1985, an EPA Science Advisory Board Workshop also reviewed the results of a recently published study on 1,1-dichloroethylene and concluded that there were increases in kidney, mammary, and lung tumors in mice and possibly leukemias in rats.[27] Thus, the evidence that 1,1-dichloroethylene is a carcinogen has been significantly strengthened. EPA's regulation of 1,1-dichloroethylene as a category II chemical appears to have been outdated the same month it was promulgated.

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[23] 50 Fed. Reg. at 47025 (November 13, 1985).

[24] Id.

[25] 49 Fed. Reg. at 24330 (June 12, 1984).

[26] 50 Fed. Reg. at 46880 (November 13, 1985).

[27] EPA Workshop, November 21, 1985.

A similar situation has arisen regarding styrene. As will be described below, a recent bioassay has been published that strengthens the evidence of styrene's carcinogenicity. This bioassay was not reviewed by EPA nor included in the developement of the RMCL for styrene.

B. EPA's approach allows less stringent regulation of chemicals for which there is substantial evidence of carcinogenicity.

EPA's non-conservative approach is inconsistent with the protective requirements of the Safe Drinking Water Act, which mandates that EPA err on the side of safety when setting standards.[28] Far from erring on the side of safety, the Agency's current approach allows chemicals for which there is substantial evidence of carcinogenicity to be regulated less stringently than those with conclusive evidence. The Agency's approach thus subjects the public to higher levels of exposure to carcinogens than its previous conservative risk assessment policy would have allowed. The following detailed discussion of styrene as a case example provides yet another vivid illustration of the non-protective nature of EPA's approach.

C. Styrene is inappropriately classified as a "Category II" carcinogen.

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[28] *See* 120 Cong. Rec. H10794 (daily ed. Nov. 19, 1974); H.R. Rep. No. 98-[Cont. next page.]

The Agency's treatment of styrene well illustrates why the IARC categories should not be used to justify less conservative regulation for Category II carcinogens. The Agency is proposing a finite RMCL of 0.14 mg/l for styrene.[29] However, EPA has ample evidence to conclude that styrene is a potential human carcinogen. There are a number of positive experimental bioassays for carcinogenicity, several of which the Agency failed to review; there are suggestive epidemiological data, and there are sufficient mutagenicity data.

Styrene has been shown to increase lung tumors in males and females of one strain of mice and males of another strain. It has been associated with increases in leukemia-lymphosarcoma in female rats, and with lymphomas in male and female mice. Further, it has been shown to increase mammary tumors in female rats. More significantly, styrene oxide, the major metabolite of styrene, has recently been found by Ponomarkov, et al., in a 1985 bioassay to be highly carcinogenic in rats, causing significant increases in carcinomas of the forestomach[30]. EPA failed to review this study and did not include it in the development of the proposed RMCL. Both styrene and styrene-oxide are mutagenic, with styrene associated with increased chromosomal aberrations in human lymphocytes in in vivo as well as in vitro studies. Finally, epidemiological studies suggest an association between

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1034, 99th Cong., 1st Sess. 22 (1984).

[29] 50 Fed. Reg. at 46936 (November 13, 1985).

[30] Ponomarkov, et al., A carcinogenicity study of styrene-7,8-oxide in rats. Cancer Letters, 24:95-101, 1984.

styrene and hematopoietic and lymphatic neoplasms. The protective mandate of the Safe Drinking Water Act clearly mandates a zero RMCL. The experimental and epidemiological data are detailed below.

1. Styrene has been shown to be carcinogenic in a number of bioassays.

Styrene, or its major metabolite, styrene oxide, has been shown to be carcinogenic in both rats and mice in a number of bioassays. Ponomarkov et al. (1978) found a statistically significant increase in lung tumors (adenomas and carcinomas) in O_{20} strain of mice.[31,32] The National Cancer Institute similarly observed a dose-related association between exposure to styrene and frequency of lung tumors in male mice of a different strain ($B6C3F_1$).[33,34]

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31 Ponomakov, V., et al., Effect of long-term oral administration of styrene to mice and rats, Scand. J. Environ. and Health, 4, suppl. 2: 127-135, 1978.

32 High doses of styrene (1,350 mg/kg) were given by gavage to mothers (one dose in the 17th day of gestation) and to offspring. The lung tumor incidence was increased among offspring. Among male offspring the incidence was 89%, compared to 67% in olive oil control and 53% in untreated control males. Among female offspring, the lung tumor incidence was 100% compared to 42% in olive oil control and 64% in untreated control females. The difference in the percentage of animals with lung tumors between styrene treated and olive oil treated groups was statistically significant for both sexes ($p < 0.01$); the difference between styrene-treated and untreated controls was statistically significant only for females ($p < 0.001$).

33 International Agency for Research on Cancer, IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, IARC Monographs Supplement 4, 1982.

34 The incidence was significantly higher ($P=0.02$) in the highest dose group (9/43 for treated versus 0/20 for controls). Styrene was administered in corn oil by gavage 5 times per week at 150 and 300 mg/kg/dose for 78 [Cont. next page.]

As discussed by EPA, styrene has also been associated with an increase in the incidence of leukemia-lymphosarcoma in female Sprague-Dawley rats in an inhalation bioassay by Jersey _et al._, 1978.[35,36] The Ponomarkov study, mentioned above, also reported an increase in lymphomas in a different strain of mice, although it did not reach statistical significance.[37,38]

Styrene has also been associated with a significantly increased incidence of combined benign and malignant mammary tumors in female Sprague-Dawley rats in a bioassay conducted by the Chemical Manufacturers' Association, according to a report by James Huff of the National Toxicology Program.[39,40] The EPA

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weeks with a 25 week additional observation period.

[35] U.S. Environmental Protection Agency, Office of Drinking Water, _Draft Drinking Water Criteria Document for Styrene_, 1985.

[36] Rats were exposed 6 hours/day, 5 days/week, for 18-24 months. The leukemia-lymphosarcoma tumor incidence was 1/85, 6/85 and 6/85 respectively in the 0, 600 and 1000 ppm dose groups. When both treated groups were combined, the incidence was statistically increased over experimental controls (P=0.04) as well as over historic controls. This experiment began with 85 rats in each group; however, mortality in the treated groups was high. The authors apparently used the 85 per group figure in calculating statistical significance. The calculation should have been adjusted for survival.

[37] Ponomarkov, V. _et al._, Effect of long-term oral administrations of styrene to mice and rats, _Scand. J. Environ. and Health_, 4, suppl. 2: 127-135, 1978.

[38] Progeny received 300 mg/kg styrene weekly for 120 weeks. Lymphoma incidence in controls and treated mice was 3/12 (25%) versus 9/24 (38%) for males and 5/13 (38%) versus 13/24 (54%) for females.

[39] Huff, J., Styrene, Styrene Oxide and Polystyrene, and B-Nitrostyrene/Styrene Carcinogenicity in Rodents, National Toxicology Program, Research Triangle Park, N.C. 1984.

[40] Rats were exposed by drinking water to 125 and 250 ppm styrene for 104 weeks. Combined neoplasms of the mammary gland (fibroadenomas, adenomas, and adenocarcinomas) were 49/96 (51%) among controls, 18/30 (60%) in the 125 ppm group and 40/60 (67%) in the 250 ppm group. The incidence of the

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failed to review this study in its Drinking Water Criteria Document for Styrene.[41] This is a significant oversight since the study provides supportive evidence for styrene's carcinogenicity.

EPA reports preliminary findings of significantly increased stomach tumors in Sprague Dawley rats in a bioassay of styrene oxide by Maltoni (1979).[42,43] The Maltoni findings have subsequently been replicated by Ponomarkov, et al., in another strain of rats in a recent bioassay at the IARC laboratory.[44,45] Although this study provides significant confirmation of styrene's carcinogenicity, it was not reviewed by

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highest dose group was significantly greater (P=0039) than in the controls. Further, the trend statistic for a dose-response relationship was significant (P=0.032).

[41] U.S. Environmental Protection Agency, Office of Drinking Water, Draft Drinking Water Criteria Document for Styrene, 1985.

[42] Id.

[43] Styrene oxide was administered by gavage to groups of 40 male and 40 female rats 4-5 times/week for 52 weeks at doses of 0, 50 or 250 mg/kg. By 135 weeks, carcinomas of the forestomach were observed in 46.5% of the high-dose group and 19.3% in the low-dose group. No such tumors were observed in controls.

[44] Ponomarkov, V. et al., A Carcinogenicity study of styrene-7,8-oxide in rats. Cancer Letters, 24:95-101, 1984.

[45] Ponomarkov, V., et al., 1984 gave 14 female rats a single gavage dose of 200 mg/kg body weight styrene-7,8-oxide in olive oil on day 17 of pregnancy. Their progeny (62 female and 43 males) received 96 weekly doses of 100-150 mg/kg body weight styrene oxide in olive oil from weaning until termination of the experiment (120 weeks). Controls (14 pregnant females and 55 female and 49 male progeny) received olive oil only. A dramatic increase in the incidence of forestomach tumors was seen in the treated progeny. Forestomach carcinomas were seen in 27% of the treated females ($P < 0.0001$) and 24% of the treated males ($P < 0.0002$) but in only 2% of female controls and none in male controls. Similarly, carcinomas in situ were seen in 10% of both treated males ($P < 0.04$) and females ($P < 0.02$) with none in controls.

EPA in the Draft Drinking Water Criteria Document For Styrene nor was it included in the development of the RMCL for styrene.[46,47]

These findings with styrene oxide are relevant to the evaluation of styrene's carcinogenicity since there is consensus that styrene-7,8-oxide is the major metabolite of styrene.[48,49] Styrene is converted by microsomal monooxygenases in vivo to styrene-7,8-oxide with metabolism taking place in the liver, kidney, intestines, lung and skin.[50] Both human lymphocytes and erythrocytes have been shown to convert styrene into styrene-7,8-oxide in vitro.[51] Styrene-7,8-oxide is likely to be the most important genotoxic metabolite of styrene. It is highly reactive and a potent mutagen, and is believed to be the ultimate carcinogenic metabolite.[52,53]

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[46] U.S. Environmental Protection Agency. Office of Drinking Water, Draft Drinking Water Criteria Document for Styrene, 1985.

[47] 50 Fed. Reg. at 47004 (November 13, 1985).

[48] Norppa, H. and H. Vairio, Genetic toxicity of styrene and some of its derivatives, Scand J. Work Environ. Health, 9:108-114, 1983.

[49] U.S. Environmental Protection Agency, Office of Drinking Water, Draft Water Criteria Document for Styrene, 1985.

[50] Male, R., et. al., In vivo transformation and tumor promotion studies of styrene and styrene oxide. Carcinogenesis 6, 9:1367-1370, 1985.

[51] Norppa, H. and H. Vainio, Genetic toxicity of styrene and some of its derivitives. Scand. J. Work Environ. Health, 9:108-114, 1983.

[52] International Agency for Research on Cancer, IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, IARC Supplement 4, 1982.

[53] Hopkins, Styrene Before the Fray, Fd. Cosmet. Toxicol., 17,3:298-299, [Cont. next page.]

2. Additional support for the carcinogenicity of styrene comes from mutagenicity data.

IARC has concluded that there is sufficient evidence of mutagenicity for both styrene and styrene oxide in short-term tests.[54] Positive results with styrene are dependent on metabolic activation.[55] Styrene oxide is highly mutagenic in a wide number of assays without metabolic activation.[56] More significantly, styrene is able to induce chromosomal aberrations, micronuclei and sister chromatid exchanges (SCEs) in cultured human lymphocytes without the use of exogenous metabolizing systems.[57] The effect of styrene on SCEs is dose dependent and can be explained by the in vitro generation of styrene-7,8-oxide.[58]

Norppa *et al.*, also recently found that styrene induced SCEs in whole-blood lymphocyte cultures from several different donors, with erthyrocytes shown to be essential for the activation of styrene.[59] Several studies have also shown an increase in chromosomal aberrations in peripheral lymphocytes of workers exposed to high levels of styrene, although no increases were seen in workers exposed to low levels.[60]

1979.

[54] International Agency for Research on Cancer, *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans*, *IARC Supplement* 4, 1982.

[55] *Id.*

[56] *Id.*

[57] Norppa, H. and H. Vainio, Genetic toxicity of styrene and some of its derivatives, *Scand. J., Work Environ. Health*, 9:108-114, 1983.

[58] *Id.*

[59] *Id.*

[Cont. next page.]

SCEs and chromosomal aberrations are indicators of potential carcinogenicity. In a review of short-term assays, an NTP subcommittee concluded that there is a link between elevated SCE frequencies and exposure to carcinogens, and that "elevated SCE frequencies may reflect exposure to carcinogens, and thus may signal an increased risk of cancer."[61] According to the same NTP review, chromosome aberrations also provide a valuable indicator of carcinogenic risk. Further, a recent review by Preston, et al. (1981) of 177 papers concluded that there is good agreement between clastogenicity and animal carcinogenicity.[62] IARC also found a good correlation between the capacity to cause chromosomal aberrations and mutagenicity as well as animal carcinogenicity in a review of the results of 400 compounds tested in the in vitro Chinese hamster fibroblast system.[63] Thus, the findings of increased chromosomal aberrations and SCE with styrene provide important support to the positive carcinogenic animal bioassays.

3. Epidemiological studies support an association between sytrene and various cancers.

Several epidemiological studies have suggested an association between leukemia and possible lymphomas and exposure

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60 International Agency for Research on Cancer, IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, IARC Supplement 4, 1982.

[61] Board of Scientific Counselors, National Toxicology Program, Report of the NTP Ad Hoc Panel on Chemical Carcinogenesis Testing and Evaluation, U.S. Dept. of Health and Human Services, 1984.

[62] Id.

[63] Id.

to styrene.[64] This includes recent evidence suggesting an elevated risk of leukemia and aleukemia in workers in the styrene-butadiene rubber industry.[65] The studies are suggestive rather than conclusive because of mixed exposures and/or small cohort size.[66] Nevertheless, they provide supportive evidence for the positive findings from experimental bioassays.

As discussed above, styrene is associated with increases in leukemia-lymphosarcoma among female rats in one bioassay and increases in lymphomas in mice in another bioassay. Styrene is an analogue of benzene, an established human carcinogen known to cause leukemia.[67,68] As is the case with styrene, exposure to benzene also causes increases in chromosomal aberrations in peripheral lymphocytes of exposed workers.[69]

In conclusion, EPA has ample evidence to conclude that styrene is a potential human carcinogen.

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[64] International Agency for Research on Cancer, IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans. IARC Supplement 4, 1982.

[65] Mienhardt, T.J., et al., Environmental epidemiologic investigation of the styrene-butadiene rubber industry, Scand. J. Work Environ. Health, 8:250-259, 1982.

[66] U.S. Environmental Protection Agency, Office of Drinking Water, Draft Drinking Water Criteria Document for Styrene, 1985.

[67] Norppa, H. and H. Vainio, Genetic toxicity of styrene and some of its derivatives, Scand. J. Work Environ. Health, 9:108-114, 1983.

[68] Rinsky, R.A. et al., Leukemia in benzene workers. Am. J. Ind. Med., 21219-245, 1981.

[69] Department of Health Services, Health Effects of Benzene, Epidemiological Study Section, 1984.

II. EPA Incorrectly Fails to Regulate the Carcinogenic Heavy Metals Cadmium and Chromium as Carcinogens Because of the Absence of Positive Testing Data by the Oral Route.

The Agency is not proposing to regulate cadmium or chromium as carcinogens in spite of the fact that cadmium is an established animal carcinogen and chromium is an established human carcinogen.[70] Instead, for both chemicals, the Agency has based the proposed RMCL on non-carcinogenic endpoints of toxicity. The Agency has taken this approach because of the absence of data showing the chemicals to be carcinogenic by the ingestion route, despite clear evidence that both are carcinogenic to the lung via the inhalation route, and substantial evidence indicating that both may be systemic carcinogens.

EPA is proposing a drastic departure from sound cancer policy in its decision not to regulate a chemical as a carcinogen if it has been shown to be carcinogenic by inhalation but not by oral exposure.[71] This approach is scientifically unfounded and contrary to the protective mandate of the Safe Drinking Water Act. Further, the approach contradicts cancer risk assessment policies established at both the state and federal levels which hold, in general, that a showing of carcinogenicity by one route is qualitatively relevant to other routes of exposure. Note, for instance, the cancer policy of the State of California which states:

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[70] 50 Fed. Reg. at 46964 (November 13, 1985).

[71] 50 Fed. Reg. at 46947 (November 13, 1985).

> In the absence of data with which to make an evaluation, it is reasonable to expect, if a substance causes cancer when administered by ingestion, it will cause cancer when inhaled, and vice versa.[72]

Note, too, this recent discussion by the White House Office of Science and Technology Policy:

> If the route of administration results in the absorption, distribution and metabolic activation (if required) of the substance, it is reasonable to regard the test as relevant for a qualitative demonstration of human carcinogenic hazard. This comparison is obviously most directly made when the route used in the test and the route of human exposure are the same, but as long as the criteria above are satisfied, the results of animal studies are generally considered qualitatively meaningful.[73]

Finally, EPA itself recently stated in publishing final RMCLs for volatile organics in drinking water that "while a drinking water study is preferred, an inhalation study may be useful for assessing drinking water effects and may be the basis for an RMCL if an additional safety uncertainty factor is employed."[74]

In making the decision not to regulate cadmium and chromium as carcinogens in drinking water EPA relied heavily on the lack of positive bioassays showing the chemicals to be carcinogenic by the oral route. However, as discussed below, the oral bioassays on both chemicals are inadequate to make an evaluation of the carcinogenic potential risk of either metal by oral exposure. In spite of the inadequacies of the oral bioassays, there is substantial evidence that both cadmium and chromium have the ability to cause cancer by the ingestion route. As detailed below, EPA has a strong basis to regulate both cadmium and chromium as carcinogens in drinking water.

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[72] State of California Department of Health Services, Carcinogen Identification Policy: A Statement of Science as a Basis of Policy, 1982.

[73] Office of Science and Technology Policy, Chemical Carcinogens: A Review of the Science and its Associated Principles, 50 Fed. Reg. at 10413-10414 (March 14, 1985).

[74] National Primary Drinking Water Regulations; Volatile Synthetic Organic Chemicals, 50 Fed. Reg. at 46880 and 46894 (November 13, 1985).

A. There is substantial evidence that cadmium has the ability to cause cancer by the ingestion route.

EPA has classified cadmium (Cd) as a Group B1 carcinogen (sufficient evidence of carcinogenicity in animals and limited evidence in humans),[75] based primarily on two studies. The first, Takenaka et al., found a highly significant, dose-related incidence of primary lung tumors in an inhalation study of Wistar rats exposed to cadmium chloride, $CdCl_2$.[76,77] The second, Thun et al., found a greater than two-fold excess of lung tumors in cadmium smelter workers with exposures of two years or more.[78,79,80]

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[75] 50 Fed. Reg. at 46965 (November 13, 1985).

[76] Takenaka, S. et al., Carcinogenicity of Cadmium aerosols in Wistar rats. J. Natl. Cancer Inst. 70:367, 1983.

[77] In the Takenaka, et al., study lung carcinomas (primarily adeno and epidemoid) were observed at each of three exposure levels: 71% lung tumors (25/35) in the highest dose groupage (50 ug cd/m^3) 53% (20/38) in the middle groupage (25 ug Cd/m^3) and 15% (6/39) in the lowest groupage (12.5 ug Cd/m^3). There were no observed lung tumors among filtered air controls.

[78] Thun, M.J. et al., Mortality Among a Cohort of U.S. Cadmium Production Workers -- an Update, JNCI 74: 325-333, 1985.

[79] EPA did not review the Thun et al. study in its Final Draft for the Drinking Water Criteria Document in Cadmium, April 1985. This is an unfortunate oversight especially in light of the fact that EPA in its Updated Mutagenicity and Carcinogenicity Assessment of Cadmium (Final

[Cont. next page.]

In the proposal, EPA concluded that the Group B1 classification of cadmium is not relevant to cadmium in drinking water since it is based on evidence of lung carcinogenicity through inhalation exposure. However, in making this assessment, the Agency overlooked substantial evidence indicating that cadmium is a systemic carcinogen with target organs other than the lung, and thus is potentially carcinogenic by ingestion as well as inhalation. These studies are reviewed below.

1. Cadmium caused increased mammary tumors in one animal bioassay.

A study by Sanders and Mahaffey found a significant increase in mammary gland fibroadenomas in male Fischer-344 rats treated with intratracheal instillations of cadmium oxide (CdO).[81,82]

Report, June 1985) concluded the Thun et al. study provided the most clear evidence of cadmium carcinogenicity in humans.

[80] The Thun et al. findings are supported by two additional recent epidemiological studies which show an increased risk of lung cancer among cadmium workers. Armstrong and Kazantis found a statistically significant excess risk of lung cancers among workers with more than 10 years exposure in the "always low category" (SMR 126, P. < 0.05). While they found no excess in either the medium or high exposure groups, most of their cohort (80%) was in the low exposure category. (Lancet, June 25, 1983, 1425-1427). Sorahan and Waterhouse found a significant excess of lung cancer in an update to their retrospective cohort study of 3025 workers from two cadmium factories in Britain among those in the high to moderate groupage with more than 30 years of follow up. While there was a lack of increase in the highest exposure category, this again could be due to limited cohort size (only 12% of their 599 deaths were recorded in workers with more than 5 years of high exposure employment.) (Br. J. Ind. Med. 40:293 - 300).

[81] Sanders, C.L. and Mahaffey, J.A., Carcinogenicity of single and multiple intratracheal instillation of cadmium oxide in the rat. Environ. Res. 33: 227-233, 1984.

[82] The 190 rats were divided into four groups. Controls received a single instillation of 0.9% NaCl; group 2, a single instillation of 25 ug CdO; group 3, two instillations of 25 ug CdO (total 50 ug) and group 4, three instillations of 25 ug CdO (total 75 ug). Mammary tumors were evidenced in 7% of the controls, 16% of the 25 ug, 12% of the 50 ug and 23% of the 75 ug dose groups. This finding was found to be significant both in a [Cont. next page.]

EPA in its Final Draft for the Drinking Water Criteria Document on Cadmium failed to review this study, however. This is a major oversight since the study provides important evidence that cadmium in animals is a systemic carcinogen with target organs other than the lung.[83] Further, intratracheal instillation of CdO is an effective method for assessing systemic carcinogenic effects of cadmium because of the rapid clearance of CdO from the lung (80% with an elimination half-life of 4 hours).

In contrast to the proposal, EPA in its Updated Mutagenicity and Carcinogenicity Assessment of Cadmium gave considerable weight to the Sanders and Mahaffey findings.[84] The review concluded:

> In view of the positive findings with cadmium chloride (Takenaka *et al.*, 1983) and less severe but more marked extrapulmonary effects (Sanders and Mahaffey, 1984) and increased extrapulmonary tissue concentration...with the chemically less soluble cadmium oxide, the observation of Hackey *et al.* (1979) that airborne cadmium may constitute a potential hazard to both lung and extrapulmonary tissue is noteworthy."[85]

2. Cadmium has caused injection site and distal tumors in numerous bioassays.

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paired comparison analysis between the control group and all Cd-treated groups ($p < 0.05$) and also when all cadmium-treated groups were pooled and treated by life-table methods for differences in tumor incidence from control ($p = 0.043$).

[83] U.S. Environmental Protection Agency, Office of Drinking Water Final Draft for the Drinking Water Criteria Document on Cadmium, Washington, D.C., April 1985.

[84] U.S Environmental Protection Agency, Office of Health and Environmental Assessment, Updated Mutagencity and Carcinogenicity Assessment of Cadmium, Final Report (EPA/600/8-83/025F). Washington, D.C. 1985.

[85] *Id.*, p. 60 (emphasis added).

Cadmium has also been shown to produce both injection site and distal tumors in numerous bioassays by subcutaneous and intramuscular injection routes.[86] Distal tumors are primarily testicular tumors (Leydig cell and interstitial cell). Moreover, a significant increase in pancreatic islet cell tumors was also found in one study.[87,88]

EPA's treatment of injection route tumors in its Final Draft for the Drinking Water Criteria Document on Cadmium is seriously deficient.[89] Specifically, the document fails to mention the increased incidence of distal tumors, which, as discussed below, are more significant than injection site tumors. Nor does the document analyze the importance of injection site and distal tumors to the assessment of cadmium carcinogencity by other routes of exposure. Nonetheless, the finding of injection site and distal tumors provides a reliable indication that cadmium will be carcinogenic by other routes of exposure as well.

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[86] International Agency for Research on Cancer (IARC), Cadmium and Cadmium Compounds, IARC Monographs on the Evaluation of Carcinogenic Risks of Chemicals to Humans, Vol. 11, 1976.

[87] U.S. Environmental Protection Agency, Office of Health and Environmental Assessment, Updated Mutagenicity and Carcinogenicity Assessment of Cadmium, Final Report (EPA 160018-831025F). Washington, D.C. 1985.

[88] A finding of injection site tumors of the prostate in a study published subsequent to EPA's Final Draft for the Drinking Water Criteria Document for Cadmium is of particular note. In this study 1.9 mg $CdCl_2$ was injected into the right ventral prostatic lobe of 12-month old rats. Histological examination revealed atypical changes ranging in severity up to invasive carcinomas in the epithelium on both the right and left side of the gland. Histological results were normal in only 17 out of 100 animals. In the remainder, simple hyperplasia was found 38 times, atypical hyperplasia 29 times, severe dysplasia 11 times and invasive carcinoma in 5 cases. (Hoffman, L., et al., Carcinogenic effects of Cadmium of the Prostrate of the Rat, Cancer Res. Clin. Oncol., 109: 193-199, 1985.) This finding is important in light of the number of epidemiological studies suggesting an increase in prostatic cancer among cadmium workers. We refer EPA to the Hoffman, et al., examination of the possible mechanism by which cadmium may exert its carcinogenic effect on the prostate.

[89] U.S. Environmental Protection Agency, Office of Drinking Water, Final Draft of the Drinking Water Criteria Document on Cadmium, Washington, D.C., April 1985.

A review of subcutaneous administration in animal bioassays by Dr. L. Tomatis of the International Agency for Research on Cancer (IARC) found in a review of 102 chemicals that only 8.7% of the chemicals that were positive for carcinogenicity by the subcutaneous route were negative when tested by other routes.[90] This finding of a 91% correlation has formed the basis of IARC's continued commitment to subcutaneous testing.

In a more recent review of the IARC database, Theiss, 1982, segregated chemicals which produced only local tumors at the site of injection from those that produced distal tumors.[91] In a review of 112 chemicals, he found those producing local tumors only were not a reliable indicator of carcinogenic response by other routes.[92] However, those chemicals that produced distal tumors were almost always tumorigenic by at least one other route of administration. And those chemicals that produced both local and distal tumors, as is the case with cadmium, were always tumorigenic by at least one other route of administration. Theiss concluded that when distal tumors are produced after injection, the result should be considered as significant as those obtained by routes of administration more relevant to humans. EPA in its Updated Mutagenicity and Carcinogenic Assessment of Cadmium similarly concluded that the "induction of tumors distant from the injection site is regarded as highly useful in the classification and identification of carcinogens."[93]

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[90] Tomatis, L., Comments on Methodology and Interpretation of Results, J.N.C.I. 59: 1341, 1977.

[91] Theiss, J.C., Utility of injection site tumorigenicity in assessing the carcinogenic risk of chemicals to man. Reg. Toxicol. Pharmacol. 2:213-222, 1982.

[92] Forty-two percent (15 out of 36) which produced only local tumors after subcutaneous administration were not tumorigenic by other routes of administration.

In a 1982 review of cadmium, IARC concluded that there was sufficent evidence of carcinogenicity in animals based entirely on the positive finding of injection site and distal tumors following subcutaneous and intramuscular injection.[94,95] EPA clearly has ample evidence to regulate cadmium as a carcinogen in drinking water based solely on the finding of distal tumors following subcutaneous and intramuscular injection.

3. EPA relies excessively on negative oral bioassays of very limited significance.

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[93] U.S. Environmental Protection Agency, Office of Health and Environmental Assessment, Updated Mutagenicity and Carcinogenicity Assessment of Cadmium, Final Report (EPA/600/8-83/025F) Washington, D.C. 1985, p. 66.

[94] International Agency for Research on Cancer (IARC). Supplement 4 to IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Humans, 1982.

[95] In the Proposed RMCLs, EPA states that the 1982 IARC finding of sufficient evidence of carcinogenicity in animals was based on "exposure to cadmium via inhalation" (450 Fed. Reg. at 46966, November 13, 1985). This is inaccurate. At the time IARC made its classification neither the Takenaka et al. (1983) nor Sanders and Mahaffey (1984) studies were available. As stated above, IARC's classification was based on the subcutaneous and intramuscular route findings. Because of the newer studies, not reviewed by IARC, EPA in its Updated Mutagenicity and Carcinogenicity Assessment of Cadmium concluded that "the carcinogenic risks of cadmium and its compounds are now seen to be greater" than at the time of the IARC review (p. 72).

EPA has relied heavily on negative oral bioassays in its decision not to regulate cadmium as a carcinogen via ingestion. First, as a general principle, positive bioassay results should not be outweighed by negative findings.[96] Second, in the case of cadmium, only one of the seven oral bioassays cited (Loser 1980) has not been found to have serious deficiencies by either EPA or IARC.[97] IARC concluded that Schroeder (1964) and Kanisawa and Schroeder (1969) used experimental dose levels that were too low for carcinogenic evaluation.[98] EPA came to similar conclusions about these two studies and also about Schroeder (1965).[99,100] (The same dose was used in all three studies.) EPA has also pointed out, regarding the Schroeder (1964, 1965) studies, that only a limited amount of histopathological evaluation was conducted, thus limiting the usefulness of these studies.[101] EPA further concluded that the Malcolm (1972) study results must be considered preliminary because detailed microscopic examination of prepared sections has not been completed.[102] Both Levy et al.

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[96] 45 Fed. Reg. at 5002 (January 25, 1980).

[97] Loser, E., A two year oral carcinogenicity study with cadmium on rats. Cancer Letters 9:191-198, 1980.

[98] International Agency for Research on Cancer (IARC), Cadmium and Cadmium Compounds, IARC Monographs on the Evaluation of Carcinogenic Risks of Chemicals to Humans, Vol. II, 1976.

[99] U.S Environmental Protection Agency, Office of Health and Environmenal Assessment, Updated Mutagenicity and Carcinogenicity Assessment of Cadmium, Final Report (EPA/600/8-83/025 F), Washington, D.C., 1985.

[100] U.S. Environmental Protection Agency, Office of Drinking Water, Final Draft for the Drinking Water Criteria Document on Cadmium, Washington, D.C. April, 1985.

[101] Id.

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(1975) and the Levy and Clark (1975) studies have also been criticized because of the low doses used and limited number of tissues histopathologically evaluated.[103,104]

Thus, the Loser (1980) study is the only negative oral bioassay of sufficient duration (2 years), dose (1, 3, 10 and 50 ppm) and histopathological evaluation to be considered an adequate bioassay. However, given the limited sensitivity of bioassays in general, a "non-positive" result does not demonstrate the absence of carcinogenicity. Despite significant evidence of cadmium's systemic carcinogenic action in bioassays using other routes of administration, the Agency relied exclusively on the non-positive findings of oral bioassays (of which only one meets basic quality standards). In NRDC's view, EPA has improperly decided not to regulate cadmium as a carcinogen in drinking water.

4. Epidemiological studies suggest an increased risk of cancer of the prostate associated with exposure to cadmium.

A number of epidemiological studies report a significant or non-significant increase in mortality due to prostate cancer among cadmium workers.[105,106,107,108,109,110] In 1976, IARC

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[102] Id.

[103] International Agency for Research on Cancer (IARC), Cadmium and cadmium compounds. IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Humans, Vol. II, 1976.

[104] U.S. Environmental Protection Agency, Office of Health and Environmental Assessment, Updated Mutagencity and Carcinogenicity Assessment of Cadmium, Final Report (EPA/600/8-83/025F) Washington, D.C., 1985.

[105] Potts, C.L., Cadmium proteinurea: the health of battery workers exposed to cadmium oxide dust. Ann. Occup. Hyg. 8:55-61, 1965.
[Cont. next page.]

concluded that "occupational exposure to cadmium in some form (possibly the oxide) increases the risk of prostate cancer in man."[111] Several (but not all) epidemiological studies published subsequent to the 1976 IARC Monograph report increased mortality from prostate cancer.

It is fair to conclude that epidemiological studies are suggestive of an association between cadmium exposure and prostatic cancer in the occupational setting. These findins thus provide additional evidence that cadmium is a systemic carcinogen with target organs other than the lung and kidney. Further, these findings are particularly significant in light of the fact that epidemiological studies to date have had severely limited power to detect an increase in prostatic cancer. Prostatic cancer is frequently a non-fatal disease, and is imperfectly documented by mortality studies, which are dependent on information

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106 Kipling, M.D., and J.A.H. Waterhouse, Cadmium and prostatic carcinoma. Lancet 1:730, 1967.

107 Lemen, R.A. et al., Cancer mortality among cadmium production workers, Ann. N.Y. Acad. Sci., 271:273, 1976.

108 Holden, H., Further mortality studies on workers exposed to cadmium fumes. Presented at a seminar on occupational exposure to cadmium, London Cadmium Assoc., March 20, 1980.

109 Kjellstrom, T., Mortality and cancer morbidity in people exposed to cadmium. Report prepared for Health Effects Research Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, N.C., Grant No. R806036101, 1982.

110 Thun, M.J., et. al., Mortality Among a Cohort of U.S. Cadmium Production Workers -- An Update, J.N.C.I., 74:225-333, 1985.

111 International Agency for Research on Cancer (IARC) Cadmium and Cadmium Compounds, IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Humans. Vol. 11, 1976.

on death certificates.[112] Further, the statistical power of most of the epidemiological studies to detect an underlying two-fold risk of death from prostate cancer is low.[113] For instance, with the Thun et al. study, which showed a non-statistically increased Standard Mortality Rate (SMR) of 213 for workers with two or more years of employment and 20 or more years of observation, the power to detect a two-fold increase is only 15%.[114]

5. Conclusion

There is sufficient animal and limited human evidence to conclude that cadmium is carcinogenic by inhalation. An intratracheal instillation bioassay provides significant evidence that cadmium is also carcinogenic to extrapulmonary tissue. The consistent finding of both injection site and distal tumors by subcutaneous and intra-muscular injection routes further provides strong evidence that cadmium is a systemic carcinogen by other routes of exposure as well. The epidemiology suggests an increased risk of prostatic cancer among cadmium workers. A protective public health policy clearly dictates that cadmium be considered to be potentially carcinogenic to humans via the oral route. EPA should promptly promulgate a zero RMCL for cadmium, in accord with its legislative mandate.

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[112] Thun, M.J., et al., Mortality among a Cohort of U.S. Cadmium Production Workers, an Update, J.N.C.I., 74:325-333, 1985.

[113] U.S. Environmental Protection Agency, Office of Health and Environmental Assessment, Updated Mutagenicity and Carcinogencity Assessment of Cadmium, Final Report (EPA/600/8-83/025F), Washington, D.C., 1985.

[114] Id.

B. Sufficient evidence of chromium's carcinogenicity exists to mandate regulation as a carcinogen.

As in the case of cadmium, EPA has not proposed to regulate chromium as a carcinogen in drinking water, despite clear evidence of excess risk of lung cancer among workers exposed to various chromium compounds. The Agency has taken this position because chromium has not been shown to be carcinogenic through ingestion exposure.

The Agency's approach is unacceptable. As previously stated, it departs from more prudent cancer risk assessment policies, which hold that a showing of carcinogenicity by one route of exposure is qualitatively relevant to other routes of exposure. Further, EPA has overlooked considerable evidence, discussed subsequently, that chromium may be a systemic carcinogen.

1. Epidemiological evidence shows chromium to be highly carcinogenic to the lung and suggests that it increases cancers at other sites as well.

Various chromium compounds have been shown to be highly carcinogenic, causing increased risk of lung cancer among exposed workers, with cancers varying between 5-40 times the national average.[115] IARC has concluded that there is sufficient evidence of carcinogenicity in humans based on these observations.[116] Of particular importance, IARC also notes that there is a suggestion that cancers at other sites are also increased in such populations[117] suggesting that chromium is a systemic, as well as a lung carcinogen. Four studies further note an increase in digestive tract cancers.

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[115] Benko, V., Chromium: A Review of Environmental and Occupational Toxicology, Journal of Hygiene, Epidemiology, Microbiology and Immunology, 29: 37-46, 1985.

[116] International Agency for Research on Cancer, IARC Monographs Supplement 4, IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, 1982.

Machle and Gregorius (1948) noted an increase in digestive tract cancers in a study of workers from 7 U.S. chromate plants (13 cases, relative risk of 2), which is statistically significant ($P < 0.05$) based on the reasonable assumption that the observed number of deaths is distributed as a Poisson random variable.[118] Royle (1975) noted an increase in gastrointestinal cancer in a retrospective study of 54 British chromium plating plants (9 cases, relative risk of 2.4).[119] The increase is also statistically significant ($P < 0.05$) based on the assumption that the observed number of deaths is distributed as a Poisson random variable.[120] Equitable Environmental Health, Inc. (1976) reported a non-significant increase in digestive system cancer in a study of worker exposure to lead and zinc chromate (6 cases, relative risk of 2.1).[121] Finally, reanalysis of more complete data by Enterline (1974) of a 1966 epidemiological study by Taylor of 3 U.S. chromate plants showed a nonsignificant excess of digestive system cancer in 16 observed, versus 10.4 expected cases (SMR 153).[122]

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[117] Id.

[118] Hayes, R.B., Cancer and occupational exposure to chromium compounds, Rev. Cancer Epidemiol 1:294-333. 1980.

[119] Royle, H., Toxicity of Chromic Acid in the Chromium Plating Industry. Environ. Research 10: 39-53, 1975.

[120] Hayes, R.B., Cancer and Occupational Exposure to Chromium Compounds, Rev. Cancer Epidemiol. 1:294-333, 1980.

[121] Id.

Other studies have observed increases at other sites. Langrad, 1980, reported an excess of prostate cancer (20 observed, 13 expected, P = 0.06) in his study of a ferrochromium and ferrosilicon production plant in Norway.[123] A study by Stocks (1957) suggests a possible link between ingested chromium and stomach cancer. Stocks analyzed the chromium content of soil samples taken from gardens of houses in three towns in Great Britain and compared the levels with the incidence of cancer in the household. The median soil chromium content was significantly higher among stomach cancer cases than among non-cancer controls.[124] In conclusion, there is considerable evidence from the epidemiological studies indicating chromium is a systemic as well as lung carcinogen.

2. Lack of positive bioassay evidence by the ingestion route does not justify regulation of chromium as a non-carcinogen, considering the other evidence.

Existing oral bioassays are inadequate to assess the carcinogenic potential of ingested chromium. There are only three experimental studies of orally administered chromium compounds and these involve chromium (III).[125] Furthermore, according to

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[122] International Agency for Research on Cancer, IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Some Metal and Metallic Compounds, Vol. 23, 1980.

[123] Id.

[124] U.S. Environmental Protection Agency, Office of Drinking Water, Final Draft for the Drinking Water Criteria on Chromium, 1985.

[Cont. next page.]

the report prepared for the California Scientific Review Panel, the three oral studies of chromium (III) involve a dose that produced no signs of toxicity. The dose may, therefore, have been below the maximum tolerated dose level.[126]

No oral ingestion studies are cited for chromium (VI) by the EPA in either the 1984 Health Assessment Document for Chromium or in the Final Draft for the Drinking Water Criteria Document on Chromium.[127,128] Lack of oral studies of chromium (VI) is particularly significant since EPA has pointed out that water treatment involving chlorination will effectively transform chromium III to chromium (VI).[129] Further, chromium (VI) permeates cell membranes more readily than chromium (III) and is highly mutagenic. Chromium (III), on the other hand, is in most cases insoluble. Thus, oral bioassays with chromium (III) are not good indicators of the carcinogenic potential of total chromium or chromium (VI).

Many hexavalent chromium compounds have been shown to produce injection site sarcomas following intramuscular and subcutaneous injection. Lead chromate also produced a distal tumor, renal carcinoma, following intramuscular administration in

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125 California Department of Health Services, Report to the Scientific Review Panel on Chromium. Part B: Health Assessment for Chromium. 1985.

126 Id.

127 U.S. Environmental Protection Agency, Health Assessment Document for Chromium, 1984.

128 U.S. Environmental Protection Agency, Office of Drinking Water, Final Draft for the Drinking Water Criteria Document on Chromium, 1985.

129 50 Fed. Reg. at 46966 (November 13, 1985).

rats.[131] Hence, the discussion of the significance of injection site and distal tumors following subcutaneous and intramuscular injection in the previous section on cadmium appears to apply to chromium as well.

The positive mutagenicity data for hexavalent chromium further support its potential carcinogenicity. Hexavalent chromium readily penetrates cell membranes and is highly mutagenic, demonstrating genotoxic effects in most short-term assays performed.[132] IARC has concluded that there is sufficient evidence of mutagenicity for Chromium (VI) in short term assays.[133]

3. Conclusion.

Although there are no adequate ingestion studies, EPA has a strong basis to regulate chromium as a carcinogen. Chromium (VI) is absorbed slowly from the gastrointestinal tract, readily penetrates cell walls and is highly mutagenic; chromium (VI) compounds have consistently produced injection site sarcomas and have produced distal tumors in one bioassay.

Of particular concern is the possibility that chromium compounds may contribute to gastrointestinal tract cancer. A number of epidemiological studies suggest that gastrointestinal tract cancers are increased in chromium workers. Further, one study suggests a link between ingested chromium and stomach cancer. A prudent approach to public health protection dictates that chromium, as well as cadmium, be considered potentially carcinogenic to humans via the oral route. EPA should promulgate a zero RMCL for chromium in light of this risk.

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[131] International Agency for Research on Cancer. IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Some Metal and Metallic Compounds, Vol. 23, 1980.

[132] California Department of Health Services. Report to the Scientific Review Pavel on Chromium. Part B: Health Assessment for Chromium. 1982.

[133] International Agency for Research on Cancer. IARC Monograph Supplement 4 to IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, 1982.

III. Asbestos Should Be Regulated As A Carcinogen With An RMCL of Zero.

EPA is proposing a finite RMCL of 7.1 x 10^6 fibers >10 um/l based on the finding of increased gastrointestinal tumors in male rats, with the proposed RMCL set at the 10^{-6} risk level.[134] This approach is inconsistent with the protective mandate of the Safe Drinking Water Act. Congress intended RMCLs for carcinogens to be set at zero. Asbestos is clearly a carcinogen. IARC has determined that there is sufficient evidence of carcinogenicity both in humans and in animals, and has classified asbestos in Group 1.[135] Asbestos is carcinogenic to humans, causing lung cancers via inhalation exposure. There is strong evidence that asbestos is also a human gastrointestinal carcinogen based on increases of asbestos in exposed workers. Further, the findings of increased gastrointestinal tract cancers in humans are supported by animal data. Given the Administrator's mandate under the Safe Drinking Water Act, which is to protect against known

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134 . 50 Fed. Reg. at 46961 (November 13, 1985).

135 Id.

and potential adverse health effects, the RMCL for absestos should be zero.

A. The evidence that asbestos is a human gastrointestinal carcinogen is compelling.

Occupational studies of asbestos exposed workers consistently found increases in gastrointestinal tract cancers. Of a total of 41 major epidemiological studies of asbestos workers, gastrointestinal cancers were found to be increased in 34.[136] In ten of these studies, the increase was statistically significant.[137] Further, there is a consistent and statistically significant relationship between increases in gastrointestinal (GI) cancer and increases in lung cancer among asbestos-exposed workers. This relationship can be expressed as SMR(GI) = 0.96 + 0.21 x SMR (lung).[138] Finally, there is a positive dose response relationship in all of the six studies that provide dose response information for gastrointestinal cancers.[139] While the studies of asbestos-exposed workers involve inhalation exposure, it is highly probable that the gastrointestinal cancers are caused by ingestion of inhaled fibers, which are cleared from the lung and swallowed into the digestive tract.

The direct evidence of carcinogenicity of asbestos to the gastrointestinal tract in humans is supported by animal data.

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[136] Environmental Protection Agency, Airborne Asbestos Health Assessment Update, EPA-600/8-84-003F, December, 1985.

[137] Id.

[138] William Nicholson, Ph.D., Environmental Sciences Laboratory, Mount Sinai School of Medicine, personal communications, April 1986.

[139] Id.

The finding of a statistically significant increase in adenomatous polyps in the colon of rats fed intermediate range chrysotile (65% >10 um) was concluded to be evidence of carcinogenicity in the NTP feeding study.[140] Additionally, while not achieving statistical significance, there was an approximately two-fold increase in the risk of malignant tumors of the gastrointestinal tract in male rats fed chrysotile plus dimethylhydrazine compared to animals fed dimethylhydrazine alone.[141]

Most community-based epidemiological studies on populations exposed to asbestos in drinking water have limited statistical power to detect increased cancer risk.[142] These studies have low power to observe increases in gastrointestinal cancer in a population exposed to relatively low levels of asbestos, and generally require a ten-fold higher risk level to show any statistically meaningful relationship.[143]

The so-called "negative" study in Duluth, Minnesota, well illustrates this limitation. In this study, there was a population of 100,000 individuals exposed to 100 x 10^6 f/l for 15 years prior to 1970. For the years 1969-1971, an annual gastrointestinal cancer mortality rate (per 100,000) of 109.6 in males and 83.8 in females was observed. This was compared to a gastrointestinal cancer mortality rate of 106.8 and 81.5 per 100,000 for males and females, respectively, in a control metropolitan area of Minneapolis-St. Paul.[144] Thus, the study shows a total excess gastrointestinal cancer mortality of 7.7 per 100,000 in Duluth between 1969 and 1971. This small increase is not statistically discernible, since the lifetime cancer risk of ingesting 100 x 10^6 f/l could be anywhere from 0 to 4%.

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[140] National Toxicology Program, Toxicology and Carcinogenesis Studies of Chrysotile Asbestos in F344/N rates. Technical Report Servies 295, November 1985.

[141] Id.

[142] Erdreich, L.S., Comparing epidemiologic studies of ingested asbestos for use in risk assessment. Env. Health Persp. 53:99-104, 1983. be filled.

[143] Sigurdson, E.E., Observations of cancer incidence surveillance in Duluth, Minnesota, Env. Health Persp. 53:61-68, 1983.

B. The NTP animal bioassay is inappropriate for assessing human risks.

EPA has based the risk assessment of asbestos in drinking water on gastrointestinal tract tumors in rats in the NTP bioassay.[145] However, this approach is not appropriate since humans appear more sensitive to asbestos carcinogenesis than are experimental animals. In addition, the NTP bioassay as used by EPA for the risk assessment did not consider the observed interactive effects, which appear extremely important to asbestos carcinogenesis.

In the case of lung cancer, the risk as measured in the rat was 100 times less than that found in humans. Lifetime exposures to 100-1000 f/ml led to 10% lung cancer in the rat versus 20+% lung cancer in human insulation and factory workers exposed for one-third of a lifetime to 5-50 f/ml.)[146,147] Part of the difference lies in the fact that human lung cancer is linked synergistically to cigarette smoking. This, however, increases the risk in smokers only ten-fold over nonsmokers, still leaving a factor of 10 difference between the risk in animals versus that in humans.

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[144] Id.

[145] 50 Fed. Reg. at 46936 (November 13, 1985).

In the case of non-thoracic cancers, interactive effects may also be important in human carcinogenesis. Although not considered by EPA, an attempt to investigate interactive effects was made in the NTP study, which found a statistically significant doubling of kidney cancer risk in female rats exposed to dimethylhydrazine and intermediate range chrysotile compared to the risk in rats exposed to dimethylhydrazine alone.[148] (Asbestos workers also have a statistically significant doubled kidney cancer risk.)[149] Further, malignant neoplasms of the gastrointestinal tract from the stomach through the colon were also doubled in male rats in the combined exposure group compared to dimethylhydrazine alone (10/125 vs. 29/175).[150] While neither of these

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[146] Wagner, J.C., et. al., The effects of the inhalation of asbestos in rats. Br. J. Cancer 29:252-269.

[147] Selikoff, J., et al., Mortality experience of insulation workers in the United States and Canada, 1943-1976, Am. N.Y. Acad. Sci., 330:91-116, 1979.

[148] National Toxicology Program, Toxicology and Carcinogenesis Studies of Chrysotile Asbestos in F344/n rats, Technical Report Series, 295, November, 1985.

[149] Selikoff, I.J., et al., Mortality experience of insulation workers in the United States and Canada, 1943-1976. Ann. N.Y. Acad. Sci. 330:91-116, 1979.

[150] National Toxicology Program, Toxicology and Carcinogenesis Studies of [Cont. next page.]

findings was replicated in the corresponding species of the other sex, concordance between sexes is often missing in animal experiments. These findings suggest a greater carcinogenic potency of chrysotile than that indicated by the incidence of adenomatous polyps in the NTP study.

Finally, the asbestos used in the NTP study, and thus the type that forms the basis for the proposed RMCL, is chrysotile, which is known to have a much lower potency for producing peritoneal mesothelioma than other asbestos varieties.[151] While chrysotile is the common contaminant from geologic erosion, crocidolite, a potent carcinogen in the human peritoneum, is a contamination product in erosion from asbestos cement pipes. Thus, the NTP study should not be used as the exclusive basis of risk assessment for asbestos in drinking water.

C. Risks associated with ingestion of asbestos should be based on the experience of occupationally exposed workers, although uncertainties need to be addressed.

As mentioned in the instant proposal, estimates of risk based upon gastrointestinal cancer observed among occupational cohorts suggest that a 10^{-6} risk occurs at exposure from 11,000 to 30,000 fibers of all sizes per liter.[152] This risk is based upon the assumption that a large portion of fibers inhaled are brought up and swallowed, thereby providing the exposure to the gastrointestinal tract.

Chrysolile Asbestos in F344/n Rats, Technical Report Series 295, November 1985.

[151] William J. Nicholson, Ph.D., Environmental Sciences Laboratory. Mount Sinai School of Medicine, personal communications. April 1986.

[152] 50 Fed. Reg. at 46961 (November 13, 1985).

There are at least two important uncertainties in these risk estimates made from inhalation exposure data. First, the size distribution of airborne asbestos involves a greater percentage of longer fibers than are typically found in most drinking water exposure circumstances. Second, no account was taken of asbestos that might inadvertently be swallowed in the occupational exposure circumstance, and thus, the exposure could have been underestimated. However, while extrapolation of effects from inhalation of asbestos to ingestion is uncertain, the important point remains. There is absolutely no human evidence that contradicts the use of human inhalation studies as a basis for quantitative risk estimates for asbestos in drinking water. Further, the uncertainties when human data are used are unlikely to be as great as 10,000-fold, which is the difference in risks between estimates made from occupational studies vs. animal data. A protective public health policy requires that the standard for asbestos be based on the gastrointestinal tract cancers in asbestos workers.

The absurdity of EPA's instant proposal for asbestos is illustrated by the experience in Woodstock, N.Y. Woodstock had chrysotile concentrations of about 10 x 10^6 fibers longer than 10 um/l (300 x 10^6 of all sizes/l) and crocidolite concentrations of about 2 x 10^6 >10um f/l. Here, the proportion of long fibers was greater than that found in occupational air exposures. People reported visible fibers in their hair after showers; shower heads and water filters were clogged and tap water was visibly turbid.

When asbestos was identified, the public concern was so great (despite EPA's benign RMCL proposal) that the system was shut down and outside water used until the pipes were replaced, all at community expense. This experience would suggest that the proposed RMCL is inadequate even to prevent clogging of water systems.

IV. EPA's Proposed RMCL For Arsenic Is Inadequate to Protect Against Carcinogenic or Non-Carcinogenic Adverse Health Effects.

EPA's proposed RMCL of 50 ug/l for arsenic is based on inconclusive evidence suggesting that arsenic may be an essential nutrient in humans. Of far greater significance is the fact that arsenic is a definite human carcinogen, shown to cause cancer via ingestion. Therefore, the RMCL for arsenic should be zero. By the Agency's own risk projections, the proposed 50 ug/l RMCL poses an exceedingly high cancer risk. Uncertainties about these projections are discussed below, but even if the projections are conservative, the risks from exposure at 50 ug/l appear excessive. Moreover, by the Agency's own calculations, the proposed RMCL would not protect against documented non-carcinogenic adverse effects in humans. Finally, given the possibility that arsenic may be an essential nutrient, by all estimates the theoretical nutritional requirement would be met at levels well below the proposed RMCL. In fact, the amount of arsenic obtained from food by itself is above the amount estimated to satisfy nutritional needs. Thus, EPA's proposed RMCL would unnecessarily subject the public to what may well be a high cancer risk as well as a risk of non-carcinogenic toxic effects.

A. EPA has based the proposed RMCL on evidence that arsenic is an essential nutrient in animals. Essentiality in humans is speculative, however, and such nutritional requirements as have been suggested would be met at levels well below the proposed RMCL and are adequately covered by diet alone.

EPA bases the proposed RMCL on data showing that arsenic is an essential nutrient in several species of experimental animals. Arsenic is recognized as an essential nutrient in rats, chicks, guinea pigs and goats.[153] However, there are no data that arsenic is an essential nutrient in humans.[154,155,156] Based on the animal studies, O'Connor *et al.* and the National Academy of Sciences (NAS) concluded that arsenic *may* be an essential nutrient in humans, and extrapolated from the animal data to estimate the nutritional requirements in humans. The NAS concluded that: "*If* 0.05 mg/kg of dietary arsenic [based on animal studies] is also a nutritionally desirable level for people, then the adequate human diet should provide a daily intake of approximately 25 to 50 ug."[157] O'Connor *et al.* estimated a lower amount, concluding "that the arsenic requirement of a human consuming 3,000 kcal/day would be between 18 and 35 ug arsenic/

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[153] National Academy of Sciences, *Drinking Water and Health*, Vol. 5, 1983.

[154] *Id.*

[155] O'Connor, T. and T. Campbell, Essential if of the Trace Element Arsenic, Final Report, Prepared for the Carcinogenic Assessment Group, U.S. Environmental Protection Agency, June, 1985.

[156] Mahaffey, K., Low Level of Arsenic, Draft, unpublished, 1985.

[157] National Academy of Science, *Drinking Water and Health*, Vol. 5, 1983 (emphasis added).

day."[158] EPA has relied on the NAS calculations in justifying its proposed RMCL for arsenic of 50 ug/l.

However, the EPA's RMCL would allow exposure from drinking water alone of 100 ug/day (2 liters of water per day at the proposed level) or 2-5 times the amounts predicted by the NAS and O'Connor estimates as being adequate to meet nutritional needs. Further, according to an FDA 1979 market basket survey, adults consume 61.5 ug/day of arsenic in the diet, which by itself is well above the theoretical nutritional requirement estimated by either projection.[159] Thus, while the nutritional requirements in humans based on animal studies are speculative, this theoretical nutritional need is adequately met by diet alone.

One of the problems of basing the RMCL on essentiality in animals is that animals appear less sensitive to both the carcinogenic and non-carcinogenic adverse effects of arsenic than humans. Arsenic is an established human carcinogen based on epidemiological studies and case reports.[160] However, most animal bioassays are negative. Humans also appear much more sensitive to the non-carcinogenic effects of arsenic than animals. The EPA identified a LOAEL of 0.06 mg/kg/day in humans.[161] LOAELs from experimental animal studies on the other

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[158] O'Connor T. and T. Campbell, Essentiality of the Trace Element Arsenic, Final Report, Prepared for the Carcinogen Assessment Group, U.S. Environmental Protection Agency June, 1985.

[159] 50 Fed. Reg. at 46960 (November 13, 1985).

[160] International Agency for Research on Cancer, Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Humans, Some Metals and Metallic Compounds, Vol. 23, 1980.

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hand are substantially higher. One chronic experimental study identified a NOAEL of 2.1 mg/kg/day in dogs, 35 times higher than the LOAEL identified in humans.[162] Another study identified a LOAEL of 0.35 mg/kg/day in mice, five times higher than the LOAEL in humans.[163] By basing the proposed RMCL on essentiality of arsenic in animals, EPA has proposed a level that is not protective of either documented carcinogenic or non-carcinogenic effects in humans.

B. Arsenic is a firmly established human carcinogen with high lifetime cancer risks projected for consumption of arsenic in drinking water at the proposed RMCL.

IARC has concluded that there is sufficient evidence that inorganic arsenic compounds are skin and lung carcinogens in humans.[164] Skin cancer, squamous cell or basal cell carcinoma, has been associated with ingestion of arsenic from case reports of patients treated with Fowler's solution, and from several epidemiological studies of persons exposed to high levels of arsenic in drinking water.[165] The most comprehensive study, and the only one adequate for risk assessment purposes, is by Tseng *et al*. (1968) and relates non-melanoma skin cancers to high

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[161] U.S. Environmental Protection Agency. Office of Drinking Water, *Quantification of Toxicological Effects of Arsenic*, 1984.

[162] *Id*.

[163] *Id*.

[164] Internatioanal Agency for Research on Cancer, *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Some Metals and Metallic Compounds*, Vol. 23, 1980.

[165] U.S. Environmental Protection Agency, *Ambient Water Quality Criteria for Arsenic*, 1980.

arsenic concentrations in well water in Taiwan.[166,167,168,169]

EPA has used the Tseng *et al*. study to predict the lifetime probability of skin cancer caused by ingestion of arsenic. The Agency's calculations predict that the lifetime risk associated with ingestion of drinking water containing 0.022 ug/l of arsenic

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[166] *Id*.

[167] International Agency for Research on Cancer, *IARC Monographs of the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Some Metals and Metallic Compounds*, Vol. 23, 1980.

[168] The animal model is inadequate for the evalution of arsenic's carcinogenicity. According to the IARC, arsenic has been tested for carcinogenic effects in mice, rats, rabbits and dogs with generally negative results. (International Agency for Research on Cancer, *Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Humans, Some Metals and Metallic Compounds*, Vol. 23, 1980). The Tseng *et al*., study is the only epidemiological study that relates levels of arsenic ingestion to skin cancer. (U.S. Environmental Protection Agency. *Ambient Water Quality Criteria for Arsenic*, 1980.) High incidences of skin cancer have been reported in several other population groups exposed to high concentrations of arsenic in drinking water, including the district of Reichenstein in Silesia, Cordoba Province in Argentina and Antofagasta, Chile. (U.S. EPA, *Ambient Water Quality Criteria for Arsenic*, 1980). There have been four negative epidemiological studies conducted in the United States, although in all cases the arsenic exposure was much less and, in most, the population was much smaller than in the Taiwan study. (U.S. Environmetal Protection Agency, Office of Drinking Water, *Quantification of Toxicological Effects of Arsenic*, 1984).

[169] Tseng *et al*., carried out a house-to-house survey of more than 40,000 people in the Taiwan area exposed to arsenic in drinking water ranging from 0.01 - 1.8 mg/l with an average of 0.5 mg/l. Controls were 7,500 people in a neighboring area with low arsenic in drinking water (ranging from 0.001 - 0,002 mg/l). Skin cancer rates averaged 10.6/1,000 among those exposed, with a dose response increase in skin cancer in the low (0.0 - 0.29 mg/l), medium (0.3 - 0.59 mg/l) and high (> 0.6 mg/l) arsenic exposures of 2.6/1,000, 10.1/1,000 and 21.4/1,000 respectively. No skin cancer cases were seen among the controls. According to Andelman *et al*., the fact that skin cancers were not seen among controls is not necessarily inconsistent with skin cancer rates for orientals, which are much lower than for caucasians. For instance, rates in Singapore are $3.5/10^5$ and $3.3/10^5$ for males and females of all ages. (See Andelman, *Feasibility Study to Resolve Questions on the Relationship of Arsenic in Drinking Water to Skin Cancer*, Final Report. Submitted to Office of Research and Development. US EPA, Washington, D.C. 1983.

is 1 x 10^{-5}.[170] Projecting based on this estimate, EPA's proposed RMCL is associated with greater than a 10^{-2} cancer risk (or more than one cancer death for every hundred people exposed).

There are difficulties associated with the Tseng et al. study that make EPA projections from it uncertain. For instance, background arsenic levels for Taiwanese controls are higher than for the U.S. population; the study contains no discussion of exposure to arsenic from other sources; the Taiwanese population had a protein deficient diet, which may have affected response; and there were other contaminants in the wells, namely bacteria and dissolved solids.[171] EPA has speculated that the risk estimates may be quite conservative since the Taiwan experience may represent a worst-case situation due to exposures to other agents and possibly dietary deficiencies.[172] Nonetheless, the Taiwan study is the only study currently available for risk assessment purposes. Andelman et al., analyzed the possibility of conducting an epidemiological study in the U.S. to determine the applicability of the Taiwan model to the U.S. population and concluded that a sufficiently large population exposed to high arsenic concentrations in water was unlikely to be found to mount such a study successfully.[173]

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[170] U.S. Environmental Protection Agency, Ambient Water Quality Criteria for Arsenic, 1980.

[171] Id.

[172] Id.

[173] Andelman, J. and M. Barnett, Feasibility Study to Resolve Questions on [Cont. next page.]

Further, when Andelman, *et al.*, modifed the EPA model to account for the difference in duration of non-melanoma skin cancers in the U.S. and Taiwan, he concluded that the negative U.S. epidemiological studies suitable for analysis did not have the statistical power either to confirm or deny the Taiwan-based risk assessment.[174]

C. According to the Agency's own calculations, the proposed RMCL would not protect against non-carcinogenic adverse effects.

By the Agency's own calculations, an RMCL of 50 ug/l would not protect against documented non-carcinogenic effects in humans. EPA used the LOAEL of 0.06 mg/kg/day in humans to calculate an effect level that would protect against non-carcinogenic effects. This LOAEL was determined from chronic adverse effects seen in children exposed to arsenic in drinking water in Antofagasta, Chile.[175] Effects included weight loss, diarrhea, debility, anorexia, scaling of the skin, hyperkeratoses, leukodermia, melanodermia, bronchitis and Raymand's disease.[176] EPA used this LOAEL to calculate an Adjusted Acceptable Daily Intake (AADI) of 30 ug/l.[177,178] If the RMCL were based on this AADI it would be 6 ug/l, taking the Agency's standard practice of allowing a 20% source contribution for arsenic in drinking water. Thus, an RMCL based on documented human non-carcinogenic toxic endpoints rather than essentiality in animal studies, would be at least 8 times lower than the Agency's proposed RMCL.

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[174] Andelman used two studies. With the Utah Study, (Southwick, *et al.*, 1981) the modified model predicted that the expected number of cases due to arsenic would be 0.252, with a total of 1.998 when background prevalence was taken into account. No cases were observed. However, the probability of observing no cases when 1.998 is expected, and treating the disease occurrence as a Poisson variable, is 0.1356 or not statistically different. In the Lane County, Oregon study (Morton *et al.*, 1976), the predicted number of cases using the modified model and adding background risk was exactly the number of incident cases found by Morton *et al*. However, Andelman concluded that only a small number of these cases are predictably arsenic related, because of the low exposures. Thus, the Lane County study also provides an insufficient test of the Taiwan model.

[175] U.S. Environmental Protection Agency, Office of Drinking Water, *Quantification of Toxicological Effects of Arsenic*, 1984.
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In conclusion, EPA has based the proposed RMCL on suggestive evidence that arsenic is an essential nutrient in humans. However, the proposed RMCL would not protect against documented human carcinogenic and non-carcinogenic adverse effects. Since arsenic is a human carcinogen, EPA should promulgate an RMCL of zero, as Congress directed.

V. EPA Should Regulate Nitrate As A Potential Human Carcinogen.

EPA has proposed the RMCL for nitrate/nitrite to protect against methemoglobinemia in infants.[179] However, there is an impressive body of recently published community-based epidemiological studies which indicate that elevated ingestion of nitrates

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Quantification of Toxicological Effects of Arsenic, 1984.

[176] Id.

[177] Id.

[178] AADI are exposure levels estimated to be without significant risk.

[179] 50 Fed. Reg. at 46936 (November 13, 1985).

in food and water are associated with cancer of the stomach and esophagus. While nitrate itself may not be directly the cause of these excess tumors, its microbial conversion to nitrite ions and subsequent formation of N-nitroso compounds is strongly believed to be involved in the observed correlation of cancer incidences with elevated nitrate levels in different regions of the world. It is therefore important that EPA regulate nitrate as a potential human carcinogen.

A. Nitrites react with secondary amines to form N-nitroso compounds, demonstrated animal carcinogens.

For the past ten years, a number of studies have illustrated that nitrite ions readily react with secondary amines, N-alkylureas and N-alkylcarbamates to form N-nitroso compounds.[180] Many such nitrosatable compounds are present in both naturally occurring and man-made food and drug products. The vast majority of the nitrosamines thus formed have been demonstrated to be carcinogenic in animal test species and consequently indicate the carcinogenic potential of nitrates and nitrites in drinking water.[181]

B. Epidemiological studies clearly correlate elevated cancer incidence with high nitrate ingestion.

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[180] National Academy of Science, The Health Effects of Nitrate, Nitrite, and N-Nitroso Compounds, National Academy Press, Washington, D.C., p. 6-3, 1981.

[181] Id.

While there is no definitive evidence from animal bioassay studies that nitrate itself causes excess tumors, there are several epidemiological studies that clearly correlate the incidence of elevated gastric and esophageal cancer with ingestion of high concentrations of nitrate compounds. The most comprehensive of these studies was carried out by P. Correa and his associates in a case-control study in Narrino, Colombia.[182,183] In this study, 276 cancer patients were compared with an equal number of matched controls from four hospitals in the region. A four-fold geographic variation in stomach cancer rates was observed, which was correlated with nitrate concentrations in well water and with nitrate levels in the urine and saliva of individual patients. It was also observed that 75% of the high-risk population had more gastritis and other "precursor lesions" by age 25 when compared to individuals from areas where nitrate levels in drinking water were low.[184] In a recent follow-up study, the above authors noted that individuals with "precursor lesions" had elevated nitrite levels when their gastric pH was above five.[185] This observation indicates that nitrosation reactions,

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[182] Correa, P., et al., Gastric Cancer in Columbia. III. Natural history of precursor lesions. J. Natl. Cancer Inst., 57: 1027-1035. 1976.

[183] Guello, C., et al., Gastric Cancer in Colombia. I. Cancer risk and suspect environmental agents. J. Natl. Cancer Inst., 57: 1015-1020, 1976.

[184] Correa, P., *et al.*, Gastric Cancer in Columbia, III. Natural history of precursor lesions. J. Natl. Cancer Inst., 57:1027-1035, 1976.

[185] Tannenbaum, S.R. *et al.*, Gastric Cancer in Colombia. IV. Nitrite and other ions in gastric contents of residents from a high risk lesion. J. Natl. Cancer Inst., 62: 9-12, 1979.

which result from a more rapid conversion of nitrate to nitrite ions at higher pH levels, may be a key factor in the observed stomach cancer incidence rates.

A second epidemiological study was conducted by R. Zaldivar and his associates in different regions of Chile on the use of endogenously extracted nitrate fertilizers in the 1960's.[186] Between 1960 and 1964, they observed a clear nitrate exposure-related association with gastric cancer mortality rates in each province in Chile that was included in the study. While no association was observed among nitrate miners (presumably because of similar exposure levels), stomach cancer mortality rates were postively correlated among farmers using nitrate fertilizers in each province.

The high incidence of stomach cancer in Japan has been suggested by a number of investigators to be associated with the consumption of salted fish and pickled vegetable products that contain high levels of naturally occurring secondary amines.[187] These studies indicate the relationship between sources of N-nitroso compounds in the diet and the incidence of gastric tumors. Elevated nitrate levels in well water have also been correlated with stomach cancer among Japanese farmers (the group with the highest incidence rates) who consume large amounts of salted-preserved foods in their diet.

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[186] R. Zaldivar, Nitrate Fertilizers or environmental pollutants: Positive correlation between nitrates ($NaNO_3$ and KNO_2) used per unit area and stomach cancer mortality dates. Experientia, 33: 264-265, 1977.

[187] National Academy of Sciences, The Health Effects of Nitrate, Nitrite and N-Nitroso Compounds, National Academy Press, Washington, D.C. 1981.

Elevated esophageal cancer rates in the Honan province of China have been correlated with the presence of nitrosamines in the diet of its inhabitants.[188,189] Nitrite-rich pickled vegetables are a staple in their diet, while the consumption of foods containing vitamin C (an inhibitor of nitrosation reactions) is low.

Other studies have also indicated the role of vitamin C in reducing risks to stomach and esophageal cancer. In an epidemiological survey of China, B. Armstrong found that stomach cancer rates are elevated in regions where individuals consume low amounts of fresh fruits and vegetables and eat higher proportions of salt-preserved foods.[190] An earlier European study also showed lower intake of citrus fruits by stomach cancer patients in the Netherlands.[191] More recently, Mettlin, et al., found an inverse relationship between intake of vitamins A and C and incidence of male esophageal cancer.[192]

These studies collectively provide strong evidence that ingestion of high nitrate/nitrite levels in food and water is associated with stomach and esophageal cancers. Although these studies are not conclusive, they are strongly suggestive that

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[188] Id.

[189] Li, M. et al. Recent progress in research on esophageal cancer in China, Adv. Cancer Res. 33:, 173-249, 1980.

[190] Armstrong, B., The epidemiology of cancer in the Peoples Republic of China, Int. J. Epidemiol. 9: 305-315, 1980.

[191] Meinsma, L., Nutrition and Cancer, Voeding, 25, pp. 357-365, 1964.

[192] Mettlin, C., et al., Diet and cancer of the esophagus, Nutr. Cancer, 2, pp. 143-147, 1981.

exposure to nitrate and nitrite in drinking water may pose a cancer risk to humans. Under these circumstances, the Safe Drinking Water Act directs EPA to err on the side of safety, and to regulate nitrate and nitrite in drinking water as potential human carcinogens.

PART TWO: DETERMINATION OF RMCLs FOR NON-CARCINOGENS

EPA's method for determining RMCLs for toxic agents not considered to have carcinogenic potential begins by estimating "Acceptable Daily Intakes" (ADIs).[193] ADIs are defined as exposure levels estimated to be without significant risk to humans when received daily over a lifetime.

To determine the ADI, it is necessary to perform toxicological analyses. The intent of a toxicological analysis is to identify the highest no-observed-adverse-effect-level (NOAEL) or the lowest-observed-adverse-effect level (LOAEL) based upon assessment of available human or animal data (usually from animal experiments). Once identified, the NOAEL or LOAEL is divided by appropriate "uncertainty" or "safety" factors, to accommodate factors such as the extrapolation of animal data to humans, the existence of weak or insufficient data, and individual differences in human sensitivity to toxic agents.[194] ADIs are then adjusted by factoring in an assumed weight of the consumer (10 kg for a child and 70 kg for an adult) and the assumed amount of drinking water consumed per day (1 liter/day per 10 kg child and 2 liters/day per 70 kg adult). This adjusted "no effects level" is termed the Adjusted ADI (AADI) and is used in EPA's determination of RMCLs for noncarcinogens as follows:

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[193] 50 Fed. Reg. at 46944 (November 13, 1985).

[194] 50 Fed. Reg. at 46944 (November 13, 1985).

RMCL = (AADI) (Percentage Drinking Water Contribution)

EPA is proposing RMCLs for a number of noncarcinogenic drinking water contaminants following the procedure described above. This is a formidable task and we commend the Agency for its effort. We do, however, have a number of concerns about certain RMCLs EPA is proposing. Our concerns are set forth below.

I. In A Reversal Of Earlier Policy, The EPA Ignores Organoleptic Factors In Setting RMCLs.

In all instances, EPA is proposing RMCLs for non-carcinogenic contaminants based strictly on toxicological endpoints. At first glance, this may appear to be the most cautious and suitable approach. However, for several contaminants in the proposal, the RMCL levels being considered would so grossly affect the water's taste and odor, no one would want to drink it. See table below.

Contaminant	Proposed RMCL(mg/L)	Estimated Organoleptic Threshold (mg/l)
copper	1.3	1.0
ethylbenzene	0.68	0.1-0.2
ortho-dichlorobenzene	0.62	0.01-0.03
pentachlorophenol	0.2	0.030
styrene	0.14	0.005-0.773
toluene	2.0	1.0
xylene	0.44	0.3

It is utterly absurd for EPA to so narrowly define drinking water contaminants that organoleptic factors which render water undrinkable would not be considered in setting an RMCL. Insofar as the Safe Drinking Water Act requires "secondary drinking water regulations" to be established for contaminants which "may adversely affect the odor or appearance of such water" and "which may cause a substantial number of persons served by the public water system providing such water to discontinue its use,"[195] it should be accepted practice that when one contaminant poses both an adverse effect to health and renders a supply obnoxious to sensory organs, the RMCL and MCL for that compound should be set low enough to avoid both results. Indeed, EPA admits to having interpreted the mandate this way in 1975 when it promulgated the current interim primary drinking water regulation for toxaphene. According to the Agency, the current MCL for toxaphene in drinking water was set at 0.005 mg/l based on the reported organoleptic effects of toxaphene at concentrations greater than 5 ug/L.[196]

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[195] 42 U.S.C. §300f et seq.

NRDC strongly recommends that EPA set RMCLs at levels that are both protective of human health and below taste, odor and color thresholds. Ignoring organoleptic effects would effectively authorize the contamination of our drinking water supplies to levels that, while technically not posing a risk to health, would render the water so nauseating that no one would drink it.

II. Greater Consistency Is Necessary in EPA's Application of Safety Factors.

EPA has adapted the NAS guidelines for determining appropriate uncertainty factors in its derivation of AADIs.[197] These guidelines were developed specifically for water contaminants, have had widespread use, and are generally accepted in the scientific community. However, for several of the inorganic chemicals in the instant proposal, EPA has applied uncertainty factors in the derivation of AADIs which differ from the traditional factors of 10, 100 or 1000. These intermediate uncertainty factors have been applied when the data appear to fall between categories.

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[196] 50 Fed. Reg. at 47006 (November 13, 1985). Available data now indicate that toxaphene is a potent carcinogen in animals. For this reason and because there is some occurrence in drinking water, a revised RMCL of zero is being proposed.

[197] 50 Fed. Reg. at 46945 (November 13, 1985).

Yet, in no instance do the available data on which a departure from the traditional safety factors is based, eliminate the void in our understanding that safety factors address.

Safety factors are specifically applied to correct for numerous unknowns and variables intrinsic to the derivation of AADIs such as the possibility of synergism between contaminants, differing sensitivities among those exposed, variabilities in body weight, uncertainties in extrapolation, etc. In this context, EPA's departures from the guidelines appear arbitrary.

The following examples illustrate EPA's erratic application of unconventional safety factors:

1. Copper - An uncertainty factor of 2 was applied with a LOAEL based on human clinical case studies. According to the guidelines, the appropriate uncertainty factor for a LOAEL based on human data is 100. EPA uses a safety factor of 2 for essentially two reasons: (1) the lowest observed effect from exposure to copper was local gastrointestinal irritation, was not permanent, and was based on several studies; and (2) copper is an essential element and the application of a larger uncertainty factor would bring the level below that considered necessary for human nutrition. With regard to the latter, EPA inappropriately assumes drinking water contributes 100 percent of the total daily burden of copper in its AADI calculation. In fact, as EPA notes, virtually all of the recommended daily

intake of 2 mg is provided by food consumption.[198] Moreover, a principal purpose of safety factors is to address the variability in population sensitivity, which the case studies on copper do not address.

2. Selenium - EPA applies an uncertainty factor of 15 with a LOAEL, stating that traditionally "an uncertainty factor of 10 would be used."[199] This is incorrect; traditionally, the minimum uncertainty factor used with a LOAEL is 100. Moreover, given EPA's concern that selenium in water is more efficiently absorbed than selenium in food, an uncertainty factor still greater than 100 may be appropriate.

3. 2,4,5-TP - NAS calculated an ADI for 2,4,5-TP using a NOAEL of 0.75 mg/kg/day from a 2-year feeding study and a safety factor of 1000. EPA, basing the AADI on the same study and the same NOAEL as NAS, used a safety factor of only 100. There is no apparent rationale supporting such a decision.[200]

4. Mercury - An uncertainty factor of 1000 was applied with a NOAEL, not for the reasons outlined in the NAS guidelines, but because proteinurea, an adverse health effect, occurred at concentrations of mercury only twice the NOAEL.[201] In this instance, rather than

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[198] 50 Fed. Reg. at 46968 (November 13, 1985).

[199] 50 Fed. Reg. at 46974 (November 13, 1985).

[200] 50 Fed. Reg. at 47008 (November 13, 1985).

apply an arbitrary uncertainty factor, it might be more appropriate to use a LOAEL and the traditional safety factor used with a LOAEL of 1000.

In sum, NRDC believes safety factors as defined in the NAS guidelines provide essential protection against intrinsic unknowns in the derivation of ADIs that could add to risk. Thus, we do not feel that a departure from the guidelines can be justified in the absence of some showing by EPA that the adjusted AADIs will provide adequate protection.

III. Where The Most Sensitive Endpoint Of Toxicity Is An Acute Phenomenon, The RMCL Should Be Derived So As To Protect The 10 kg Child Rather Than The 70 kg Adult.

AADIs are traditionally calculated based upon the 70 kg adult except for those chemicals where children have been shown to be the more sensitive subpopulation.[202] Children, however, are a more sensitive subpopulation compared with adults, and this fact must be considered in the calculation of AADIs, particularly for chemicals which cause acutely toxic effects. First, a child has a lower body weight than an adult and therefore can absorb less of a toxic agent. Second, a child's body organs are growing rapidly until the end of adolescence and thus are at an increased risk relative to adults from chemicals that impair organ functions. Finally, children's physiological defenses against harm from chemical and physical exposure hazards are not fully devel-

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[201] 50 Fed. Reg. at 46972 (November 13, 1985).

[202] 50 Fed. Reg. 46945 (November 13, 1985).

oped. Thus, toxic substances are more likely to enter a child's body and to have a more severe impact because of the relative immaturity of the child's immune and enzyme systems.[203] For all of these reasons, it is imperative that RMCLs for chemicals that trigger an acute response be set to protect the 10 kg child rather than just the 70 kg adult.

Because of the child's greater sensitivity to toxic effects, RMCLs for such chemicals as aldicarb and carbofuran, for which the principal toxic effect is an acute reversible phenomenon (in this case cholinesterase inhibition) should be set to protect the 10 kg child. NRDC therefore objects to the RMCLs EPA is proposing for these two chemicals, 0.009 mg/L and 0.036 mg/L, respectively, which were calculated based on the AADIs for the 70 kg adult. In the case of aldicarb, EPA argues that the RMCL is protective of the 10 kg child over durations of exposure that are less-than-lifetime. However, the Agency has assumed that drinking water constitutes a contribution to a child's total exposure that is almost 4 times greater than for adults.[204] There is nothing in the literature to support such an assumption. Indeed, it is highly questionable for the simple reason that whereas a child consumes a disproportionately greater volume of water than adults, he/she also exchanges a greater volume of air.[205]

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[203] L. Jacobson, Children's Art Hazards. New York: The Natural Resources Defense Council, 1984.

[204] 50 Fed. Reg. 46986 (November 13, 1985).

The RMCLs for aldicarb and carbofuran should be recalculated to protect the 10 kg child from the acute toxic effects associated with exposure to these two chemicals. RMCLs for other chemicals for which the principal toxic effect is also acute should be derived in a similar manner. Moreover, in the absence of information as to the relative contribution of drinking water to total exposure to a toxic agent for a child as compared to an adult, a maximum 20 percent contribution should be assumed in both cases.

IV. The Sensitivity Of A 10 kg Child Should Be A Factor In The Determination of ADIs Based On Chronic Health Effects.

EPA does not consider the risk to the 10 kg child when calculating ADIs based on chronic health effects. Instead, the computation only takes into account the risk to the 70 kg adult. This approach will underestimate the actual risk to the individual from exposure to a contaminant at the computed concentration because it does not recognize that the risk during childhood is proportionately higher than risk during adulthood. As noted above children are more sensitive to the toxic effects of chemicals. Moreover, they consume a disproportionately greater volume of water compared to adults. Hence, it is generally agreed that the risk of adverse harm to health from exposure to toxins is greater while one is young than when one is fully grown.[206] It is important, therefore, that the ADI based on long-term chronic health effects be adjusted to account for the increased sensitivity of the exposed individual during his/her childhood years. In order to provide protection for the child as well as the adult exposed to toxins over a lifetime, NRDC suggests that EPA base the RMCL calculations on exposure to a 20-30 kg person.

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[205] It is assumed that a 10 kg child consumes 1 liter of water a day vs. a 70 kg adult who consumes 2 liters a day. Children also have a higher respiratory rate than adults and may receive up to 2 or 3 times greater exposure to any noxious dust or vapors in the air. N.W. Shock, "Physiological Growth," p. 166. In Human Development, ed. Frank Falkner (Philadelphia, PA.: W.B. Sunders, 1966); D.N. Kane, "Bad Air for Children," Env. 18 (Nov. 1976): 26-33.

V. Drinking Water Should Be Assumed to Contribute No Greater Than 20 Percent Of The Total Daily Intake Of A Contaminant.

EPA based the proposed RMCLs for numerous contaminants on the assumption that drinking water was the principal or only source of exposure. With few exceptions, this is a highly inappropriate assumption that contradicts the accepted approach recommended by the National Academy of Sciences (NAS).

NAS provided projections of 1 percent and 20 percent as illustrations of drinking water contributions.[207] Indeed, in the past EPA itself assumed a 20 percent contribution from drinking water to the total daily burden, stating that:

> [B]ecause of the wide range of environmental exposure distributions that would occur across urban and rural populations as well as because of age and occupationally-related differences, assumption of a 20 percent contribution from drinking water would be reasonably conservative and protective.[208]

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[206] National Academy of Sciences, Toxicity of Selected Contaminants. Vol. 6, Chapter 9. Washington, D.C.: National Academy Press, 1985. p.3.

[207] National Academy of Science, Drinking Water and Health. Vol. 1. 1977.

Especially troublesome is EPA's handling of several inorganic chemicals for which, the Agency argued, data on the actual contribution from other sources were available and therefore could be factored in. We cite chromium as an example.

For chromium, EPA assumed a 70 percent contribution from water. This is absurdly high since, according to EPA's own criteria document on chromium, there are very limited data on human exposure to chromium from drinking water, food and air,[209] and in the absence of data, caution is advised. Moreover, available data cited in the criteria document indicate that the contribution of chromium from food actually falls within the range of 50 to 99 percent of the total daily burden and probably in most cases within 66 to 95 percent of the total.[210] While the contribution from water may, in a few cases, be as great as 50 percent, smaller contributions are more likely and 20 percent is actually quite reasonable and by no means overprotective.

What the chromium example illustrates is that relative source contributions cannot be readily distinguished and may vary considerably from one individual to the next, depending on occupation, exposure to ambient air, diet, and other factors. Indeed, waterborne contaminants may be 10 percent of the total for one individual and 90 percent for another even within the same geographic area. It is appropriate therefore to assume a conser-

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[208] 49 Fed. Reg. 24338 (June 12, 1984).

[209] U.S. Environmental Protection Agency, Office of Drinking Water *Final Draft for the Drinking Water Criteria on Chromium*, 1985.

[210] *Id.* at IV:1-3.

vative contribution from water in all cases. NRDC accepts the 20% estimate as adequately protective.

VI. EPA Must Consider All Potential Routes Of Human Exposure Via Drinking Water And Include These Factors In Its RMCL Calculations.

Implicit in EPA's calculation of RMCLs for noncarcinogens is the assumption that ingestion constitutes the exclusive route of exposure to contaminants in drinking water. Several recent studies indicate that such an assumption disregards other routes of exposure such as skin absorption during bathing or swimming, and inhalation of vapors while showering, cooking and washing.[211,212,213,214]

According to H.S. Brown, et al., skin absorption contributed an average of 64 percent of the total dose of volatile organic chemicals in water.[215] Indeed, "[W]hen factors such as hydration, skin condition, additional routes of entry, and individual and anatomical site variations are taken into account, skin absorption can become a significant portal of entry for contami-

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[211] H.S. Brown, et. al., The Role of Skin Absorption as a Route of Exposure for Volatile Organic Compounds (VOCs) in Drinking Water. Amer. J. Publ. Health 74:479-484 (1984).

[212] J.H. Highland, et al., The Impact of Groundwater Contaminants on Indoor Air Quality. 12th Energy Technology Conference: 728-740.

[213] H. Harris, et. al. Adverse Health Effects at a Tennessee Hazardous Waste Disposal Site. Hazardous Waste 1(2):183-204, 1984.

[214] J.H. Highland, et al., "Assessment of Risk to the Residents of Jackson Township Exposed to Chemically Contaminated Water Supplies." Environ, Washington, D.C., May 1982.

[215] H.S. Brown et al., supra note 211.

nants."[216] Moreover, when the pH of water is factored into the absorptive potential of contaminants in water, weakly acidic and weakly alkaline solutions were found to increase the rate at which contaminants diffused out of water.[217] In acidified water regions of the country, the skin absorption potential of contaminants thus takes on added significance.

Equally compelling evidence on exposure to drinking water contaminants via inhalation is also now available. A recent health risk assessment analysis performed on homes near an allegedly leaking landfill site revealed that inhalation exposure from volatile organic compounds while showering was estimated at nearly 50 percent of the ingestion exposure.[218] The concentrations of volatile chemicals in the gaseous state are greatly influenced by physiochemical properties, especially solubility in water, vapor pressure of the compounds, their ability to adsorb onto air particulates, and the rates at which they can volatilize from aqueous solution. Lower aqueous solubility will increase the likelihood of their being found in the gaseous state as will high vapor pressure.[219]

The omission from the AADI calculations of information on other exposure routes that drinking water contaminants can take may grossly underestimate the overall risk from exposure to many contaminants, especially the volatile organics. NRDC, therefore, strongly urges that in deriving RMCLs, EPA should consider all potential routes of human exposure via drinking water and routinely include these factors in its calculations. Based on data now available, an additional reduction of at least 50 percent after the 80 percent source contribution reduction would appear to be appropriate.

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[216] Id.

[217] A. Matoltsky, et al., Studies of the Epidermal Nature of the Water Barrier, Part II: Investigation of the Chemical Nature of the Water Barrier." J. of Investigative Dermatology 50: 19-26(1968).

[218] J.H. Highland, et al., supra, note 212.

[219] J.B. Andelman, Human Exposure to Volatile Halogenated Organic Chemicals in Indoor and Outdoor Air. Env. Health Perspectives 62:313-318 (1985).

PART THREE: COMPOUNDS NOT REGULATED OR REGULATED LESS STRINGENTLY THAN CURRENT INTERIM MCLs

I. EPA Should Establish RMCLs For Contaminants Whenever Toxicological Data Suggest The Potential For Adverse Health Effects. The Agency Should Not Establish RMCLs That Provide Less Health Protection Than Current MCLs Unless There Is A Compelling Scientific Basis For Doing So.

It is clear from the legislative history that Congress intended RMCLs to prevent any known or anticipated adverse health effects with an adequate margin of safety. However, despite the Agency's recognition of its duty to take a preventive approach in establishing RMCLs, EPA specifically did not utilize such an approach in deciding against establishing RMCLs for various contaminants of drinking water. A similar departure from the strongly preventive orientation of the statute is also apparent in the proposals to establish RMCLs for several compounds presently subject to interim MCLs at levels that are less protective than the MCLs. NRDC believes that EPA's failure to use a preventive approach is violative of the Safe Drinking Water Act. RMCLs should be established for contaminants of drinking water whenever toxicity data suggest the potential for adverse effects on health. Similarly, RMCLs that provide less health protection than current interim standards should not be promulgated unless a compelling scientific basis exists for doing so.

A. EPA's decision not to develop RMCLs for a number of contaminants for which data exist suggesting the possibility of serious adverse health effects violates the Agency's duty under the Safe Drinking Water Act.

EPA decided not to develop RMCLs for a long list of inorganic chemicals such as molybdenum, nickel, cyanide, sodium, sulfate, silver, aluminum, antimony, beryllium, thallium, vanadium, and zinc. For several of these substances, there are data suggesting the possibility of serious adverse health effects. For example, nickel is a known carcinogen. Although nickel has not been shown to be carcinogenic through oral exposure, a prudent cancer risk assessment policy considers a showing of carcinogenicity by one route to be qualitatively relevant to other routes of exposure.[220] Indeed the Agency has elsewhere stated that data from other exposure routes may provide the basis for an RMCL.[221] Under the Safe Drinking Water Act, EPA has a duty to err on the side of safety in evaluating the potential risks posed by exposure to toxic substances, such as nickel, in drinking water.

The Agency's proffered rationales for failing to protect consumers against a long list of toxic drinking water contaminants appear flatly contrary to the intent of the Safe Drinking Water Act. For example, EPA has decided not to establish RMCLs for such contaminants as sodium, because the causal association with hypertension is not conclusive;[222] or dioxin, because there is as yet no "definite relationship" to human cancer;[223] or silver, because the admittedly "markedly disfiguring" permanent effect of argyria "does not impair the functioning of the body...."[224]

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[220] See supra text at pages 20-37.

[221] Final RMCLs for Volatile Organic Chemicals, 50 Fed. Reg. at 46994 (November 13, 1985).

These criteria for determining whether a contaminant should be the subject of an RMCL appear far more stringent than Congress intended. Rather than seeking to prevent harm to health before it occurs, the Agency is opting only to react after the fact, when there is documented and conclusive proof of harm to humans. NRDC objected strongly to the application of these illegal criteria in developing the fluoride RMCL, and we object for the same reason here. We urge EPA to reconsider its decision not to set RMCLs for the many contaminants listed in the SOC notice, and to make new determinations applying preventive criteria consistent with Congress' clear intent to protect health against any adverse effect, known or potential.

B. EPA should not establish RMCLs that provide less health protection than current MCLs unless there is a compelling scientific basis for doing so.

For several contaminants, the Agency has proposed RMCLs which are less protective than the current interim MCLs for those substances. The specific contaminants involved are barium, chromium, mercury, selenium, methoxychlor, and 2,4,5-TP. In addition, the Agency has proposed no RMCL for silver or endrin.

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[222] 50 Fed. Reg. at 46980 (November 13, 1985).

[223] Id. at 47010.

[224] Id. at 46979.

The process of revising the primary standards necessarily requires a careful review of the scientific and occurrence data relevant to the subject contaminants. That process, however, should enhance rather than weaken the existing levels of protection afforded by the primary regulations. Consistent with the preventive, precautionary orientation of the Safe Drinking Water Act, EPA should not establish RMCLs that provide less health protection than current MCLs unless there is a compelling scientific basis for doing so. The application of unduly stringent evidentiary criteria is not an acceptable justification for relaxing existing protections; new data allaying prior health concerns, however, could provide such a justification.

PART FOUR: AN RMCL FOR TOTAL SYNTHETHIC ORGANIC COMPOUNDS (TSOCs) IS NEEDED.

RMCLs for organic chemicals in drinking water should, at a minimum, be set so as to minimize consumer exposure to the extent practical. To this end, NRDC recommends that EPA establish an RMCL for total synthetic organic chemicals (TSOCs).[225]

A TSOC RMCL will address the problem of multiple exposures associated with setting separate standards for each individual drinking water contaminant. As EPA noted in its RMCL proposal for VOCs, multiple exposure is "a major problem."[226] Exposure to multiple organic contaminants poses considerable risk from additive as well as possibly synergistic effects. The Agency itself has expressed concerns about situations where the contaminants' concentrations are only slightly beneath their respective MCLs; the system technically would be in compliance and yet the overall cumulative exposure levels could be quite high.

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[225] EPA asked for comments on a total standard for organics in its Proposed Recommended Maximum Contaminant Levels for Volatile Organic Compounds in Drinking Water. 49 Fed. Reg. 24330 (June 12, 1984).

Despite EPA's expressed concerns, the Agency has finalized and/or proposed RMCLs which, as we have discussed earlier in these comments and in our comments on EPA's RMCL and MCL proposals for VOCs, are excessive.[227] We are not alone in our conclusions. Michael Burke, Director of the Bureau of Public Water Supply Protection of the New York State Department of Health, notes in testimony before the EPA on its proposed MCLs for p-dichlorobenzene and 1,1,1-trichloroethane, that "the existence of these chemicals in a water supply at the proposed levels would constitute in our minds, gross contamination."[228] It is now New York State's policy not to allow individual organic chemical contaminants to exceed 50 ppb and total organic chemical concentrations in drinking water to exceed 100 ug/L.[229]

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[227] See supra text at pages 57-59. See also Wendy Gordon, Robin Whyatt, Jacqueline Warren, Comments of the Natural Resources Defense Council on the U.S. Environmental Protection Agency's Proposed Maximum Contaminant Levels for Volatile Organic Compounds in Drinking Water, Feb. 11, 1986; Wendy Gordon, Judith Klotz and Jacqueline Warren. Comments of the Natural Resources Defense Council on the U.S. Environmental Protection Agency's Proposed Recommended Maximum Contaminant Levels for Volatile Organic Compounds in Drinking Water. Sept. 10, 1984.

[228] Michael Burke, P.E., New York State Dept. of Health, Testimony on U.S. Environmental Protection Agency Proposed Rulemaking. Volatile Synthetic Organic Chemicals, Maximum Contaminant Levels. Albany. Jan. 13, 1986. Indeed, in New York State surveys, p-dichlorobenzene has never been detected and 1,1,1-trichloroethane has not, with only two exceptions, been found at concentrations greater than 10 ug/L.

NRDC agrees with New York State that individual RMCLs greater than 50 ppb are not only excessive, but also impractical and contradict one of the principal purposes of the SDWA, which is to minimize consumer exposure to toxic organic chemicals in drinking water. Similar, if not the same, analytical and treatment techniques are necessary to handle contaminants for which EPA is proposing RMCLs of zero or in the low ppb range. Consequently, it is feasible to monitor and treat virtually all organics to much lower levels than EPA has proposed for numerous contaminants. In addition, a sufficient toxicological database may not exist for most organic contaminants to support a conclusion that the RMCLs when greater than 50 ppb, provide an "adequate margin of safety" as the SDWA requires. Finally, even at 50 ug/L, many substances have an obnoxious smell.[230]

A TSOC standard should be set at a level which is reasonably achievable using generally available technology. NRDC believes the evidence supports a TSOC standard of 100 ppb. As EPA notes, best technology generally available can achieve, under routine operating conditions, 99+ percent removal efficiency on a wide range of organic contaminants.[231] The organic contaminant concentration would have to exceed 10,000 ppb for the standard not to be achievable with a 99 percent removal efficiency.[232] Moreover, treatment methods can be altered to achieve even greater contaminant reduction, in the rare case where concentrations exceed 10,000 ppb.

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[229] New York State Dept. of Health, EHM Technical Reference Item pws-69-Organic Chemical Action Steps for Drinking Water. Dec. 12, 1985.

[230] See Table on page 58.

[231] 50 Fed. Reg. at 46912 (November 13, 1985).

If RMCLs for individual organic chemicals were capped at 50 ppb, current RMCLs and MCLs for a number of non-carcinogens (i.e., those greater than 50 ppb) would have to be revised downward. (See the table below.)

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[232] Organic contaminants have rarely been found in drinking water in concentrations exceeding 10,000 ppb. 50 Fed. Reg. 46917 (November 13, 1985).

RMCLs for SOCs Being Proposed at Concentrations Greater than 50 ppb*

Compound	RMCL (ppb)
Cis-1,2,-Dichloroethylene	70
O-Dichlorobenzene	620
2,4-D	70
Ethylbenzene	680
Methoxychlor	340
Monochlorobenzene	60
Pentachlorophenol	220
Styrene	140
Toluene	2000
2,4,5,-TP	52
Trans-1,2-dichloroethylene	70
Xylene	440

NRDC believes an RMCL for TSOC is essential to protect public health and that this need is a principal reason for capping all individual RMCLs at 50 ppb and total RMCLs at 100 ppb. The adequate margin of safety requirement of the Safe Drinking Water Act cannot be satisfied unless the Agency protects against additive and synergistic effects of exposure to numerous toxic organic contaminants in drinking water. An RMCL for total synthetic organics would provide such protection and should be established.

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* See Table 12. 50 Fed. Reg. at 46982.

Conclusion

The intent of Congress in the passage of the Safe Drinking Water Act is quite explicit that RMCLs are to be preventive and to resolve uncertainties on the side of health protection. Conclusive proof is not needed in order to regulate a substance; all that is required is that a judgment be made that a contaminant may have an adverse effect. Thus, the RMCLs are to be set at levels which will prevent any known or anticipated adverse health effects with an adequate margin of safety, taking into account possible synergistic effects, long-term and multi-media exposures and the existence of more susceptible groups in the population. In accordance with this clear mandate, we urge EPA to seriously reconsider the RMCLs it has proposed which, in their present form, fall far short of what the Safe Drinking Water Act requires.

In particular, we strongly recommend that EPA discard its present approach to carcinogens and return to its previous conservative cancer risk assessment policy according to which RMCLs for carcinogens would be set at zero. In addition, we urge EPA to tighten proposed RMCLs for non-carcinogens to take into account a number of factors including organoleptic effects, the elevated sensitivities of children, and other routes of exposure to drinking water contaminants besides ingestion. Finally, we suggest that EPA consider capping individual RMCLs for synthetic organic chemicals, and establishing an RMCL for total synthetic organic chemicals as a way of preventing synergistic effects of exposure to multiple contaminants.

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STATEMENT OF A. BLAKEMAN EARLY
WASHINGTON REPRESENTATIVE, SIERRA CLUB

BEFORE THE
SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

June 25, 1987

Mr. Chairman and members of the Committee, I appreciate the opportunity to testify before you today as you continue your oversight of the Superfund program. This Committee has taken the lead in supervising the implementation of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and, on behalf of the Sierra Club and the entire environmental community, I want to thank you for your excellent work to date. Aggressive and vigilant Congressional oversight is crucial to the Superfund's long-term success.

Your subject today is the Environmental Protection Agency's (EPA) compliance with provisions that are the heart of SARA--the uniform, national cleanup standards. These newly strengthened standards ensure that $8.5 billion in public trust fund money, and billions more in funds from the private sector, are spent in a manner that protects human health and the environment. Apart from the size of the fund itself, no issue was of more importance to the environmental community during four arduous years of

"When we try to pick out anything by itself, we find it hitched to everything else in the universe." *John Muir*

debating the reauthorization of the program. The future success of Superfund depends on how the agency interprets these standards over the next couple of years.

If the agency does not comply with the law in establishing "how clean is clean" at thousands of leaking toxic waste sites across the country, we will not only have wasted billions of dollars and abused the public's trust, we will have stepped onto an inescapable treadmill which will see our great great grandchildren still sitting in rooms like this one belaboring the threat of toxic wastes to their health, their drinking water and their future.

Unfortunately, the report I bring you today concerning the agency's progress in the seven months since SARA became law is not good news. In preparation for today's hearing, we have reviewed ten Records of Decision (RODs) that EPA has made final since the enactment of the statute. Such documents are the agency's final, comprehensive statements describing the remedies has selected at National Priorities List (NPL) sites. RODs serve as the definitive roadmap for all subsequent engineering and construction work at such sites and are the basis for public comment on the soundness and legality of the agency's cleanup decisions. Because the agency has not yet issued any definitive policy statements concerning its interpretation of SARA's cleanup standard provisions, these ten documents are also the sole means of evaluating EPA's track record to date.

Our review of the ten RODs reveals a disorganized, confused bureaucracy making seat-of-the-pants, poorly documented decisions that fail to protect public health and violate the law. Seven years into the program, we have not progressed beyond the ad hoc and inconsistent process that was the hallmark of Superfund's grim first few years. Most disturbing of all, the new cleanup standards contained in SARA are not only being abused, they are being used as window dressing to confuse the public and provide unwarranted reassurance that health is being protected. Consider the following facts:

* At the Mid-South Wood Products site in Arkansas, EPA selected a remedy that it estimated would present a future risk of 1 in a million (1 X 10-6) deaths. Then the agency sat down to negotiate the remedy with the chemical companies that are the potentially responsible parties (PRPs) at the site. When the two sides got up from the negotiating table, they had settled the fate of uncounted Arkansas citizens, and raised the fatal risks remaining after cleanup to 1 in 100,000 deaths.

* At the Bayou Bonfouca site in Louisiana, EPA decided that, following cleanup, the residue of polynuclear aromatic hydrocarbons (PAHs), an extremely toxic and carcinogenic waste, would remain as high as 1300 parts per million (ppm) in sediment and 100 ppm in soil. But at the Newport Dump Site in Kentucky, the remedial action selected by the agency supposedly will reduce the level of such chemicals in the soil to 1 ppm. The unlucky citizens of Louisiana can envy their counterparts in Kentucky for being the inexplicable beneficiaries of a bureaucratic roll of the dice.

* In the same vein, unlucky citizens living near the West Virginia Ordnance Works in West Virginia will be exposed after cleanup to contamination in fish and game posing a risk of 4 in 100,000 (4 X 10-5) deaths. Their luckier counterparts in Kingston, New Hampshire will risk only 1 in 100,000 deaths following the cleanup of the Ottati & Goss site.

  The citizens living near Bayou Bonfouca and Bayou Sorrel receive even less protection, since the contamination of fish and game was not even studied.

* SARA clearly requires that cleanups achieve Maximum Contaminant Level Goals (MCLGs) when such standards are applicable, relevant and appropriate. None of the ten RODs even considered--much less applied--these standards. Instead, a handful of the RODs considered the weak sister of MCLGs--the Maximum Contaminant Level (MCLs) which lower the protection of human health on the basis of the costs to municipal water systems of treating drinking water.

- At four of the ten sites reviewed, the final remedy selected by the agency involves containing the wastes onsite with a temporary cap when the site is either subject to seasonal flooding or located on the banks of major rivers. These "cleanups" therefore amount to little more than leaving huge areas and quantities of toxic sludges, soils and liquids liquids sloshing around in swampy land, waiting to be washed outside their boundaries into contiguous water supplies. Cleanups in this category include the Bayou Sorrel Site; the Bayou Bonfouca site, and the Cleve Reber Site in Louisiana; and the Newport Dump Site in Kentucky.

Mr. Chairman, the Congress' goal in passing SARA was simple and straightforward. You and the other chief sponsors of the law were determined to guarantee the citizens living around Superfund sites uniform, objective cleanup decisions that adequately protect their health and their environment over the long-term. Accordingly, SARA requires not only that cleanup meet all applicable, relevant and appropriate health and performance standards in other major federal and state environmental laws, but also that such cleanups use permanent treatment technologies as the preferred approach. Only by meeting such standards can you promise your constituents that their health is protected and only by insisting on permanent remedies can you hope to finish the job you have begun.

Tragically, EPA still has not heard your message. Seven years ago, you were confronted with program administrators who were accused of using Superfund to pay off political favors. Today, you are confronted with administrators who give lip service to protecting health but in fact are willing to make the expedient decisions allowing toxic-laden sites to linger on as threats to public health for decades. The effect of both approaches is the same: a Superfund program that continues to make bad and inconsistent cleanups the rule and the reality.

The inconsistent approaches taken in the ten RODs underscore the urgent need for the agency to develop specific national policies for its regional offices to use in making such decisions. Although SARA gives EPA eighteen months to issue final amendments to the National Contingency Plan (NCP), Superfund's central regulation, dozens of RODs may be written before such amendments are formally promulgated. To date, the agency has not even managed to adopt a uniform format for such documents and the ongoing integrity of the program is clearly in jeopardy.

We are certain, for example, that it is just a matter of time before members of industry who are PRPs at these sites conduct similar analyses of the inconsistency of EPA's decision-making across the nation. When they do, they will have little trouble fashioning arguments that the agency's approach to cleanup is not based on any consistent, logical application of the law. When EPA then tries to sue such PRPs to recover cleanup costs, courts may conclude that the agency is not entitled to a full recovery of such funds. In short, the agency's erratic, inconsistent approach to cleanup standards today could compromise the fiscal integrity of the fund years into the future.

Turning to the problems I have highlighted, I would like to describe the case studies on which they are based so that the Committee will be able to pursue these issues with the agency. I would stress that the review of the ten RODs we conducted was preliminary only and was hampered by the disorganization and superficiality of the documents themselves. In some cases, the RODs did not even contain a full listing of the contaminants which were at issue at the site. We are hopeful that when the Committee requires the agency to explain these decisions, and conducts a more thorough, long-term analysis of the decision-making process, additional details will shed useful light on where the agency is going, and why.

Negotiating the Remedy with PRPs:
The Case of Mid-South Wood Products

The Mid-South Wood Products site is located in western Arkansas, within a mile of the town of Mena, in Polk County. The site covers 57 acres and is the result of wood treatment operations that are still going on today. In fact, the ROD for the site notes that these operations continue to result in releases of arsenic, even though the plant owners have been participating in negotiations with the agency.

The site was first brought to the government's attention in 1976, when the nearby Rock Creek and the Mountain Fork River suffered a 100 per cent fish kill for a distance 8 1/2 miles downstream of the site and a 10 per cent fish kill to a distance 17 1/2 miles downstream of the site. An Arkansas Game and Fish officer traced the kill back to the site and discovered that a drain valve had opened, and the deadly contents of a toxic pond had been released in the creek and river. When federal and state agencies started testing property around the site, they found high concentrations of some of the most dreaded members of the toxic chemical family, including pentachlorophenol (PCP), arsenic and chromium. Soil in a 200 foot radius of the ongoing wood treatment plant was found to be laced with arsenic at concentrations up to 1435 parts per million.

Although the Mid-South site has been under intense investigation by federal and state government for over a decade, the site has never been fenced and access to its extremely dangerous stockpile of pollution continues, as we speak, unabated.

The Mid-South ROD selects a remedial action that involves excavation and redisposal onsite of some of the contaminated soils; covering the most toxic pond with a clay cap; offsite disposal of some oils and sludges;

limited treatment of groundwater to remove organic pollutants; and extensive groundwater monitoring. It is worth noting that the ROD was signed on November 14, 1987, the last day on which sites qualified for "grandfather" treatment under SARA--that is, the remedies selected only had to comply with the law "to the maximum extent practicable." It is clear from the ROD that had the agency failed to meet this deadline, the remedy at Mid-South would have changed substantially.

At page 58 of the ROD, EPA states:

> EPA's Feasibility Study Report developed cleanup criteria for arsenic (3 ppm) and chromium (10 ppm) based on the mean value of these contaminants found in background samples. On the other hand, the action level for carcinogenic PAHs was derived from the EPA's Carcinogenic Assessment Group lifetime cancer risk model. EPA selected a 1 X 10-6 concentration for total carcinogenic PAHs (300 ppb) and entered into [PRP] negotiations with this platform.
>
> The cleanup criteria resulting from PRP negotiations called for an action level for arsenic and chromium to be set at any concentration that exceeds the range of background concentrations (i.e., arsenic [less than] 5.6 ppm and chromium [less than] 19.4 ppm). The cleanup requirements for total carcinogenic PAH compounds ... will be set at a lifetime cancer risk of 1 X 10-5 (3ppm). (emphasis added)

In short, Mr. Chairman, somewhere along the way in the negotiating process, the PRPs at this site decided that they didn't feel like paying to make sure that no more than 1 in a million Americans died from drinking contaminated water. Instead, they only wanted to pay for sufficient cleanup which would risk 10 in a million cancer deaths. And the United States government, carrying out your mandate to protect human health and the environment, decided to go along with their agenda. Even though Congress has authorized $8.5 billion for cleanup and enforcement over the next five years, the determining factor in how safe this site will be after cleanup is the relative generosity of the parties responsible for creating the sites to begin with.

Inconsistent Health Standards:
The Cases of Bayou Bonfouca,
Newport Dump, Ottati & Goss, Cleve Reber,
Bayou Sorrel and West Virginia Ordnance

One of the most disturbing aspects of the first three years of the Superfund programs was the frequent news reports that decisions about cleanup were being made not on the basis of public health concerns, but rather on the basis of such inappropriate factors as the political party of the district's representative. Superfund soon achieved a reputation as an erratic, politically administered and ineffective program and only a massive shakeup at the agency and a criminal prosecution of the program's chief administrator helped to restore the credibility of the program.

The major goal of SARA's national cleanup standards was to guarantee that such scandals could never threaten Superfund again. This Committee and other authors of the legislation believed that the program would only have credibility if it applied uniform standards across-the-board at each and every site, with protection of human health as its overriding concern. But an examination of the RODs signed thusfar reveals that the major factor determining how much a citizen's health will be protected after cleanup is still geography and not the uniform national standards that were the Congress' clear intention in enacting SARA. At several sites, post-cleanup levels for the same chemical vary by substantial orders of magnitude. EPA does not explain these changes, nor does the agency invoke any of the several "affirmative findings"--or waivers (e.g. technological impracticability)-- that would be legitimate justifications for the different results. Rather, EPA leaves citizens at the dirtier cleanup locations to wonder why they are unlucky in relation to their more fortunate neighbors.

Compare and contrast the following ROB decisions:

1. BAYOU BONFOUCA versus NEWPORT DUMP

The levels of PAHs which will be left in sediment (or sludge) after cleanup of the Bayou Bonfouca site in Slidell, Louisiana is 1300 ppm; the level left in soil will be 100 ppm. Bayou Bonfouca ROD, at page 28.

But at the Newport Dump site in Wilder, Kentucky, acceptable levels of post-cleanup contamination for Benzo(A)Pyrene, a common PAH, was set at 1.00 ppm), a fraction of the level found acceptable in Louisiana. Newport Dump ROD, Table 9.

2. WEST VIRGINIA ORDNANCE versus OTTATI & GOSS AND BAYOUS SORREL AND BONFOUCA

Cleanup at the West Virginia Ordnance site in Mason County, West Virginia will leave surrounding populations exposed to a lifetime cancer risk associated with regular use of the site and consumption of harvested game at 1 in 25,000, or 4 X 10-5. West Virginia Ordnance Works ROD, at page 34.

Luckier citizens at the Ottati & Goss site in Kingston, New Hampshire, will only have to risk an overall lifetime cancer rate of 1 in 100,000, or 1 X 10-5. Ottati & Goss ROD, at page 38.

However, notwithstanding the location of Bayou Sorrel and Bayou Bonfouca in areas that have commonly been flooded, no examination of pollutant impact in fish and game was made. This glaring omission occurred even though 30 fishing shacks exist near Bayou Sorrel and a marina is located a short distance from Bayou Bonfouca.

EPA may try and explain away these glaring inconsistencies by claiming that peculiar circumstances at each of the above-referenced sites made it technologically infeasible, or astronomically expensive to achieve consistent results. SARA recognizes these legitimate problems and provides an easy solution for the agency: it has only to make one of several "affirmative findings"--commonly known as waivers--and explain the basis for its decision to the affected community.

But EPA is unwilling to follow this procedure, preferring instead to bury its legitimate with its invalid concerns in confusing, technical and virtually unreadable "risk assessment" analyses at individual sites. Not one of the RODs we reviewed exercised a single waiver provision in the law. In fact, the agency is well on its way to rendering this procedure null and void as a practical matter.

MCLGs, MCLs and Beyond:
The Case of New Brighton

As members of the Committee know, SARA specifically identifies maximum contaminant level goals (MCLGs) established under the Safe Drinking Water Act as a discrete category of "applicable, relevant and appropriate" standards that must be applied at Superfund sites. MCLGs establish "safe" levels of contamination in public drinking water supplies on the basis of health considerations only. In contrast, the weak sister of these standards--maximum contaminant levels (MCLs) take costs into account in determining levels of protection. Member of this Committee wrote MCLGs into the law in order to avoid routine application of the cost-tainted MCLs to Superfund cleanups.

Recently, thirteen members of the Superfund Conference Committee, including several members of this panel, wrote EPA to reiterate their concern about the agency's apparent misreading of the law in this important area, and its preliminary decision to apply MCLs in lieu of MCLGs to

Superfund sites. All I can say after reviewing the ten RODs is that you better speak a little louder, they still haven't heard you.

Not one of the ten RODs even considers, much less applies MCLGs. The ROD that most clearly considers the weaker MCL drinking water standard--the New Brighton, Minnesota site, does not require or even encourage the possibility of cleanup to achieve a higher level of protection, even though the additional cost may be minimal. In this phase of the remedial action at New Brighton, the only action considered was drinking water treatment or replacement. We believe the law clearly requires the agency to either apply MCLG's or invoke one of the waiver requirements. The ROD does not do either. The Committee should seek a clearer understanding as to just what circumstances would cause the agency to apply MCLG's.

Ridiculous Remedies:
The Cases of West Virginia Ordnance,
Bayou Bonfouca, Bayou Sorrel,
Newport Dump and Cleve Reber

Mr. Chairman, I reach last a category of problems with EPA's implementation of the Superfund program which can only be described as the selection of remedies that do not pass the laugh test. Four of the ten RODs we reviewed involved "cleanups" that will leave large quantities of wastes resting in swampy, waterlogged ground that is subject to flooding or on the banks of a major river, with its only protection a partial cap to keep the rainfall out. This type of approach is like what would happen if I stepped into a swimming pool with an umbrella over my head. The results of these pseudo-cleanups may prove no less devastating.

Bayou Sorrel

The Bayou Sorrel site, on the shores of Upper Grand River, rests on swamp lands that are "prone to periodic flooding and poor drainage."

(Bayou Sorrel ROD, at page 1) The ROD continues, "Most of the site would be inundated by the 100 year flood caused by backwater from the Borrow River and the Upper Grand River." (ROD at page 4)

In the summer of 1978, a truck driver dumping volatile wastes into a toxic pond on the site died from fumes he inhaled; the Lousiana courts then ordered the site closed to all future dumping activities. The site is estimated to contain over 1 million cubic feet of hazardous wastes.

The remedy selected by the agency for this site involves leaving the wastes onsite, with a partial cap and extensive groundwater monitoring.

Bayou Bonfouca

The Bayou Bonfouca site, located on the shores of Western Creek, is in the 100-year floodplain of the bayou. About 750 people live within one mile of this abandoned and dismantled creosote works facility. The entire area is characterized by standing water and saturated surface soil.

Although the remedy selected by the agency involves the excavation and incineration of some contaminated sludges, 20,000 cubic yards of contaminated soil will be left onsite and covered with a cap to keep out rainfall. Extensive monitoring will be required to verify the continued effectiveness of this remedy.

Cleve Reber

The Cleve Reber site, near the banks of the Mississippi River, covers a total area of some 24.6 acres and is in the 100 year floodplain of both

Lake Maurepas and Lake Pontchartrain. According to the ROD, "The site and surrounding area is relatively flat and exhibit the characteristics of high-water prone to periodic flooding and poor drainage." (Cleve Reber ROD, at page 1) The primary chemical posing a health risk at the site is hexachlorobenzene (HCB) which presents a 1 in a million cancer death risk at concentrations as low as 21 parts per trillion.

The remedy selected by the agency involves leaving contaminated soils and sediments onsite, covering the area with a cap and instituting 30-year groundwater monitoring.

Newport Dump

The Newport Dump, located on the Licking River, a tributary of the Ohio River, is approximately 250 feet upstream of the main raw water intake for a plant serving 75,000 people. Accordincg to the ROD, "The lower river terrace [of the site] occupies the areas adjacent to the river and is frequently flooded." (Newport Dump ROD, at page 1) Some one million cubic yards of solid and hazardous wastes are buried at the site.

The agency has decided to spend about half a million dollars to install monitoring and leachate collection systems, and "regrade" and "revegetate" the site.

Conclusion

Mr. Chairman and members of the Committee, all of us had high hopes that the reauthorized Superfund program would learn from past mistakes and, with ample resources and a renewed commitment to public health protection, would come to grips with our nation's most intractable environmental problems. In only seven short months, we may have already reached the point where these hopes seem little more than naive fantasies.

Until unless this agency recognizes and understands its clear and uncompromising statutory mandate to select remedies that protect human health and the environment, the public's trust will be abused and Superfund will continue a failure.

Thank you.

STATEMENT OF
J. WINSTON PORTER
ASSISTANT ADMINISTRATOR FOR
SOLID WASTE AND EMERGENCY RESPONSE
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

JUNE 25, 1987

Good morning, Mr. Chairman. It is a pleasure to be here today to discuss EPA's implementation of the Superfund program. I have with me Francis Blake, General Counsel of the Environmental Protection Agency; Michael Cook, Director of the Office of Drinking Water; and Henry L. Longest, II, Director of the Office of Emergency and Remedial Response. As you requested, my testimony today provides a discussion of EPA's development of a cleanup standards policy under Section 121 of the Superfund Amendments and Reauthorization Act (SARA).

In Section 121 two major activities are discussed: the selection of the remedial action and the degree of cleanup at a Superfund site. My testimony today will deal briefly with the selection of remedial action issue but primarily concentrate on the degree of cleanup. This is in accordance with your request that I discuss the issues addressed in the Congressional letter of March 27, 1987, and EPA's May 21, 1987, response.

Selection of Remedy

Section 121 of SARA provides rather detailed guidance on the processes and preferences to be used in the selection of remedial actions. The "bottom line" is the instruction that "the President shall select a remedial action that is protective of human health and the environment, that is cost effective, and that utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable."

In assessing various remedial alternatives, the following factors, at a minimum, are to be taken into account.

"(A) the long term uncertainities associated with land disposal;

(B) the goals, objectives, and requirements of the Solid Waste Disposal Act;

(C) the persistence, toxicity, mobility, and propensity to bioaccumulate of such hazardous substances and their constituents;

(D) short- and long-term potential for adverse health effects from human exposure;

(E) long-term maintenance costs;

(F) the potential for future remedial action costs if the alternative remedial action in question were to fail; and

(G) the potential threat to human health and the environment associated with excavation, transportation, and redisposal, or containment."

EPA is currently using the above factors to make a large number of Records of Decision (RODs) in FY-87. In formulating these RODs, the Agency intends to involve the State and local community. We intend to codify the Section 121 requirements in proposed revisions to the National Contingency Plan. We also plan to issue various interim guidances to EPA regions and the States.

Degree of Clean-up

Section 121 of SARA states that remedial actions selected shall attain a degree of cleanup which, at a minimum, assures protection of human health and the environment. The section directs that remedial actions shall also meet both Federal and State standards, requirements, criteria, or limitations which are legally applicable or relevant and appropriate requirements (ARARs) under the circumstances of the release or threatened release at the site.

Section 121 also specifies that "such remedial action shall require a level or standard of control which at least attains Maximum Contaminant Level Goals established under the Safe Drinking Water Act and water quality criteria established under Section 304 or 303 of the Clean Water Act, where such goals or criteria are relevant and appropriate under the circumstances of the release or threatened release."

Under the Safe Drinking Water Act, maximum contaminant level goals (MCLGs) are health-based levels at which no adverse health effects would arise, with a margin of safety. They are not enforceable, and they have no effect other than to limit the lower bound of potential MCLs. Maximum contaminant levels (MCLs) are legally enforceable limits set as close to the MCLGs as is feasible.

For known or probable human carcinogens (Classes A and B), MCLGs are set at zero. MCLGs for chemicals with equivocal evidence of carcinogenicity (Class C) are generally set based on non-carcinogenic endpoints, but have an additional uncertainty factor applied to account for the equivocal evidence. MCLs for carcinogens will never be set at the MCLG of zero based on several considerations, including the difficulty of demonstrating compliance (or noncompliance) with zero. However, as standards for public water supplies, MCLs are fully protective of public health. We expect all will be set so that the risk of drinking water at the MCL falls within the range of one in 10,000 (10^{-4}) to one in a million (10^{-6}) excess, upper-bound individual lifetime risk. Additional factors considered when setting MCLs for carcinogens include effectiveness of treatment by the best available technologies, detectability, practical quantification limits, and cost. In all cases that we know about or can foresee, cost never causes MCLs to fall outside the acceptable risk range.

For non-carcinogens, MCLGs are set using both the threshold below which no health effects have been observed and a safety factor. MCLs for non-carcinogens (and Class C carcinogens) will nearly always be set at the MCLG. As required by the SDWA amendments, the Agency will publish MCLs for 83 contaminants by

June, 1989. These rules will include revisions of the interim MCLs. In addition, EPA will list and regulate at least 25 substances on a three year cycle, beginning in 1988.

It is this MCL/MCLG issue which is the primary focus of the exchange of letters I mentioned. I will now reiterate EPA's position on the use of MCLs or MCLGs as relevant and appropriate requirements for the cleanup of groundwater that is an actual or potential source of drinking water.

- The Agency believes that MCLs will generally be the applicable or relevant and appropriate requirements for determining cleanup levels of groundwater that may be used for drinking water. MCLs are applicable where water will be provided to people for drinking. Otherwise, where surface or groundwater is or will be used for drinking, MCLs are generally relevant and appropriate as cleanup standards.

- The Agency recognizes that there may be special circumstances where protection of human health or the environment requires more stringent standards than MCLs, as with multiple contaminants or pathways of exposure that present extraordinary risks. In such cases, the Agency will make a site-specific determination of the more stringent standards by considering MCLGs, our policy on use of appropriate risk ranges for carcinogens, levels of quantification, and other pertinent criteria.

- EPA believes that MCLs are protective of public health. As the legally enforceable standards under the Safe Drinking Water Act, they represent the level of water quality that the Federal Government believes is acceptable for over 200 million Americans to consume every day from public water supplies. We believe it is inconsistent to expect, as a general matter, that a higher level of ambient ground or surface water quality should be attained at a Superfund site.

- In other regulatory contexts, such as the Resource Conservation and Recovery Act (RCRA) groundwater protection standards, the Agency has considered MCLs to be appropriate for setting levels of groundwater cleanup. In enacting the Hazardous and Solid Waste Amendments, Congress extended the scope of the RCRA groundwater protection program but did not take issue with the cleanup standards specified therein.

- EPA considers the cost of technologies available to municipalities in setting MCLs, but these costs have not, to date, affected the levels of MCLs promulgated.

- While relevant and appropriate requirements are used to achieve the requisite degree of protection, the statute does not direct EPA to eliminate all risk. We believe that a risk range of 10^{-4} to 10^{-7} individual lifetime risk for carcinogens provides adequate protection of human health and provides a sound basis for determining when requirements are relevant and appropriate. There are, of course, other factors besides this risk range, such as non-human impacts, which may result in a more stringent standard.

- We expect that MCLs for all carcinogens will be set within the risk range that the Agency has determined is acceptable for residual risks after control of contaminants. Further, for non-carcinogens, which are the majority of chemicals to be controlled, MCLs will nearly always be set at the MCLG. These standards will assure that even sensitive populations will experience no adverse health effects. Thus, there will be no difference in the protectiveness of MCLGs and MCLs for most contaminants, and, as discussed above, the MCLs provide a sufficient level of protectiveness even for carcinogens.

I would like to take this opportunity to emphasize that I believe strongly that the action we are taking to define a consistent Agency approach to groundwater cleanup is well within our responsibility as an Agency to determine, and a rational approach that is fully protective of human health and the environment. As I stated previously, MCLs are the legally enforceable standards that all public drinking water supplies are expected to meet as a matter of law. In setting MCLs, EPA is implementing a statutorily-mandated process and set of criteria that Congress believed appropriate for defining the level of water quality that Americans can safely consume at the tap.

Since the MCL is the result of a Congressionally-mandated process and is used by the Agency in other regulatory contexts, such as the RCRA groundwater protection standards, it is the appropriate foundation for a national groundwater cleanup policy under CERCLA, aimed at protecting the drinking water use of an aquifer. EPA must consider a variety of factors in setting MCLs. We do not believe that Congress, by giving us the authority to consider such factors as cost and technology when setting MCLs, established a standard-setting process that compromises protection of human health.

In conclusion, I believe the Agency has developed a reasonable approach toward cleanup standards, based on Section 121 of SARA. I can assure you of the Agency's commitment to make this program effective in protecting human health and the environment from uncontrolled hazardous releases and past contamination.

Thank you for the opportunity to address you today. We will be happy to answer any questions the Subcommittee may have.

Proposed MCLs for VOCs

commercial) laboratories participating in the PE studies.

2. *Availability/Performance of Treatment Technologies*

Two technologies, packed tower aeration and granular activated carbon (GAC) adsorption, are specifically suitable for VOC control, have high theoretical and empirically determined removal efficiencies (90–99% or more), have been used by drinking water systems in the U.S., and their costs are reasonably affordable when used by large systems. These technologies are thus considered best technologies generally available for determination of the MCLs.

Reasonable removal efficiencies for packed tower aeration are up to 99 percent for eight of the VOCs and up to 99.9 percent for vinyl chloride. In most cases, GAC can achieve VOC levels below detection until breakthrough which could be 12 months or longer. Consideration include: (1) The variability of VOCs in the raw water (± 50–100% variation in raw water concentration is a reasonable estimate); and (2) the feasibility of performance monitoring at $150 to $200 per sample.

3. *Levels of VOC Occurrence*

As stated above, application of the available technologies will either achieve a concentration lower than the analytical detection limit (e.g., via GAC) or remove up to 99 percent of the raw water concentration. Legislative history suggests that MCLs should be based upon treatment afforable by large systems using relatively clean intake water. In order to project an estimate of expected VOC contamination, positive occurrence results from EPA and State VOC surveys have been pooled (Table 11) and for each VOC, the median and 95th percentile concentrations determined. The latter concentration represents the concentration below which 95 percent of the positive sample results would occur. For example, about 238 or 95% of 251 selected positive samples were contaminated with tetrachloroethylene at concentrations between the MDL (probably 0.5 μg/l) and 175 μg/l. Median levels are usually well below 5 μg/l. If the median level were considered to represent the "relatively clean intake water" suggested in the legislative history, application of aeration technology (i.e. 99% removal) would result in levels below the PQLs.

The surveys included both public water systems samples and a few ground water samples not necessarily used for drinking water; the latter were often collected near suspected spill or contamination sites. The information in Table 11 represents only the positive portion of the samples measured. This provides a way to project an upper bound on the maximum contamination that 95 percent of the community water systems could expect before applying treatment.

TABLE 11.—VOC RAW WATER LEVELS

VOC	No. of contamination incidences	Median: 50th percentile μg/l	95th percentile μg/l
Trichloroethylene	257	4.6	300
Tetrachloroethylene	251	3.3	175
Carbon Tetrachloride	134	2.8	40
1,2-Dichloroethane	58	3.2	100
1,1-Dichloroethylene	47	3.5	50
Benzene	61	1.8	30
Vinyl chloride	15	4.3	70
p-Dichlorobenzene	57	0.3	4
1,1,1-Trichloroethane	186	3.5	140

4. Other Technicial Feasibility Factors

Air pollution due to aeration does not appear to be a problem in the vast majority of cases. Assessments of air emissions of VOCs have shown potential levels in the air to be negligible. Some States have indicated that aeration of VOCs without air pollution control is not a viable alternative in their State. Air pollution control using gas phase carbon adsorption is available, but total production costs would approximately double. In these cases, the systems would probably choose GAC adsorption as the mode of water treatment.

5. Costs of Treatment

The costs for the removal of the nine VOCs are considered reasonable for medium and large systems; costs vary from 5 to 15 cents/1000 gallons for aeration and from about 10 to 85 cents/1000 gallons for GAC adsorption. The annual cost per family is presented in Table 12. Costs for small systems are high (38–150 cents/1000 gallons) but again costs are worst case scenarios and actual costs would probably be less. In addition, a number of small systems have installed aeration or GAC for control of VOCs which would indicate that these technologies are affordable.

Total national costs are also shown in Table 12 which is based upon the use of all occurrence data and projecting the number of systems that would need to install treatment at three alternate levels for the MCLs. The increase in total national costs becomes larger if MCLs are set at 1 μg/l as opposed to 5 μg/l or 10 μg/l. At MCLs of 1 μg/l, many more groundwater systems would need to install treatment. In addition, many surface water systems would also need to install treatment because when surface water systems have VOCs, they are generally at concentrations less than 5 μg/l.

TABLE 12.—COSTS IMPACTS OF MCLs AT VARIOUS LEVELS

MCL Opts. μg/l	Estimated # systems impacted	National cost ($ millions)		Annual cost per family per size of system (dollars per year)			
		Total capital	Annual	Very small	Small	Medium	Large
1	3,800	1,300	100	98	47	12	8
5	1,300	280	21	91	41	12	3
10	800	150	11	90	42	11	1

E. Proposed MCLs

EPA is proposing to set the MCLs based upon: (1) 99+ percent removal by packed tower aeration (99.9% for vinyl chloride) and granular activated carbon and (2) the capabilities of laboratories to measure VOCs within reasonable limits of prevision and accuracy (i.e., the PQL is 5 μg/l for eight VOCs and 1 μg/l for vinyl chloride). Doubling the median values in Table 11 to allow for 100 percent raw water variability and reducing that amount by 99% would result in MCLs below the PQLs in every case. In this analysis, median and lower values would represent the SDWA requirement to set MCLs based upon relatively clean intake waters. Looking at a worst case scenario, sample calculations are shown below based upon raw water levels corresponding to the 95th percentile of the positive EPA and State occurrence data in Table 11 for each VOC. An assumed raw water concentration fluctuation of 100 percent was factored into the calculations below (i.e., the 95th percentile of the occurrence data was increased by 100% to determine the appropriate raw water concentration).

	μg/l
Benzene:	
95th percentile	30
plus 100% variation	60
99% removal	0.6
PQL	5
MCL	5

CMA

CHEMICAL MANUFACTURERS ASSOCIATION

WRITTEN STATEMENT OF THE

CHEMICAL MANUFACTURERS ASSOCIATION

BEFORE THE

SUPERFUND AND ENVIRONMENTAL OVERSIGHT SUBCOMMITTEE

OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

OF THE

UNITED STATES SENATE

ON EPA'S PLANNED

APPROACH TO SARA SECTION 121 IMPLEMENTATION

JULY 23, 1987

2501 M Street, NW • Washington, DC 20037 • Telephone 202/887-1100 • Telex 89617 (CMA WSH)

The Chemical Manufacturers Association is pleased to offer the following brief comments on EPA's planned approach to implement the new cleanup standards, Section 121, under the Superfund Amendments and Reauthorization Act of 1986 (SARA).

CMA is a nonprofit trade association whose member companies represent more than 90 percent of the productive capacity for basic industrial chemicals in this country. CMA strongly supports the national waste site cleanup program under Superfund, and we have played an active role in the development of the SARA legislation and regulations. In addition, many of our members are involved at Superfund sites as potentially responsible parties (PRP's). Therefore, the Agency's implementation of this program is of vital interest to CMA members.

A question that has occasioned considerable controversy is whether Maximum Contaminant Levels ("MCLs") or Maximum Contaminant Level Goals ("MCLGs") should be applied as legally applicable or relevant and appropriate standards for purposes of groundwater remediation under Section 121 of SARA. CMA believes that neither MCLs nor MCLGs are likely to be "legally applicable" at a Superfund site, since Superfund sites are not public water suppliers. At the same time, we believe that MCLs are more likely than MCLGs to be "relevant and appropriate" for purposes of Superfund remediation. We have reached this position after considering the nature of MCLs and MCLGs under the Safe Drinking Water Act.

MCLGs are promulgated under the Safe Drinking Water Act as nonenforceable health-based goals. MCLs, by contrast, are legally enforceable standards. They are set as close to the respective MCLGs as feasible. However, the fact that feasibility is considered in setting MCLs does not mean that they are not highly protective of public health. To the contrary, in all cases, MCLs have been set (or proposed) at levels that EPA has determined to be "safe" and "protective of public health." See 52 Fed. Reg. 25690, 25700 - 25701 (July 8, 1987).

In setting MCLGs, EPA has distinguished broadly between carcinogens and noncarcinogens. For noncarcinogens, MCLGs have been set at a level that is designed to ensure that even the most sensitive individuals will experience no adverse health effects after a lifetime's consumption of drinking water. Since it has been feasible to achieve such levels through treatment, the MCLs for noncarcinogens have been set at the respective MCLGs. Accordingly, for noncarcinogens, the argument regarding the use of MCLs or MCLGs as the relevant and appropriate cleanup standard is essentially moot.

In the case of carcinogens, EPA has distinguished between those substances that it classifies as "known" or "probable" carcinogens (Groups A and B) and those that it classifies as only "possible" carcinogens (Group C). In the past, EPA has set MCLGs of zero for contaminants classified in Groups A and B, while MCLGs for Group C contaminants have been set at non-zero levels using an additional safety factor or a highly conservative risk-based value.

In most cases, the MCL for a Group C contaminant is likely to be set at the same level as the MCLG. By contrast, if the MCLG for a Group A or B contaminant is set at zero, the MCL would be set above the MCLG (though still at an exceedingly low level), since a concentration level of zero would be either infeasible or, at the very least, unmeasurable. However, even for Group A and B contaminants, MCLs, as indicated above, have been set at levels that are so low as to be "safe" and "protective of the public health." And EPA has indicated its intention to ensure that MCLs for Group A and B contaminants continue to be set at levels that are "safe" in the future.

When the foregoing points are understood, it becomes clear that MCLs can more appropriately be used as the "relevant and appropriate" cleanup standards than MCLGs. We would caution, however, that the identification of the "relevant and appropriate" standard for groundwater remediation under SARA must be site-specific. Thus, even an MCL should be considered only as a potential "applicable" or "relevant and approriate" standard. In all cases, a site-specific analysis must be performed.

The overall remedial objective set forth in Section 121 of SARA is to "attain a degree of cleanup . . . which assures protection of human health and the environment." Furthermore, "[s]uch remedial actions [are to] be relevant and appropriate under the circumstances presented by the release or threatened release of [the hazardous] substance, pollutant, or contaminant." As noted above, MCLs both for carcinogens and noncarcinogens are set at levels that are deemed to be "safe" and "protective of public health." These determinations are premised on the assumption that two liters of water containing contaminants at the MCL will be consumed daily for a 70-year lifetime. Groundwater at a Superfund site is unlikely to be directly consumed as drinking water by any individuals and certainly would not be so consumed for a period of 70 years. But even if groundwater at a Superfund site were consumed directly as drinking water, it would be "safe" and "protective of public health," as long as contaminants in the groundwater were not present above their respective MCLs.

In short, if groundwater at a Superfund site is cleaned up to the MCL, an individual taking his drinking water directly from the Superfund site would be receiving water that is as safe as the drinking water supplied by public water systems throughout the country. It is unrealistic and illogical to require that groundwater at a Superfund site be cleaner than drinking water that is supplied to citizens throughout the country by public water systems subject to EPA's National Primary Drinking Water Regulations.

If MCLGs of zero were applied as the "relevant and appropriate" cleanup standards at Superfund sites, the remediation process would be greatly complicated and delayed in many cases, since limitations of cleanup techniques and analytical methodology would make it impossible to achieve the MCLG. Complex waiver provisions would have to be invoked, and impractical remediation schemes might be adopted. All of this would impede the cleanup process in a futile attempt to achieve remediation standards that cannot sensibly be applied at Superfund sites and that are not necessary and appropriate to "assure protection of human health and the environment."

For these reasons, we strongly believe that MCLs, rather than MCLGs, should be considered as "relevant and appropriate" cleanup standards at Superfund sites.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 6 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Honorable Frank R. Lautenberg
Chairman, Subcommittee on Superfund
and Environmental Oversight
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Senator Lautenberg:

At the recent hearing on June 26, 1987, you raised two questions which I would like to address and furnish additional information.

First, you raised the question of expediting the technical assistance grants to communities which are called for under the Superfund Amendments and Reauthorization Act of 1986 (SARA). I have asked my staff to take a hard look at our schedule to determine if it can be expedited. Let me first briefly update you on the current process and status.

SARA requires a rulemaking process for these grants. We decided to publish an interim final rule in order to expedite this process. This enables us to put in place and immediately use the required rules while continuing to accept public comment on refining and improving the technical assistance grant program. Currently we have an advanced notice of rulemaking (ANRM) printed in the Federal Register for public comment. This ANRM raises a number of significant questions for public comment, including such items as:

- the types of groups which would be eligible for receipt of a grant;
- the criteria for waivers for more than a $50,000 grant to a community;
- the appropriate role of the states in administering the grants; and
- when to waive the recipients' required 20% match.

Our 45 day comment period ends on July 27, 1987. As soon as the comment period is over, we will begin developing the interim final rule. I will make every effort to expedite this final phase in order to begin providing grants.

The second item you raised was whether we would hold the applicable or relevant and appropriate requirements (ARARs) guidance which we intend to send to the EPA Regions and states. You were concerned about the opportunity for public comment.

We do intend to go ahead with interim guidance on ARARs, since we have many records of decision which are to made shortly. I believe it is important for us to make these decisions and continue with expeditious cleanup of these sites. The interim guidance will help to ensure consistency in records of decision throughout our Regional offices. As indicated in my testimony, there are many factors for consideration in a cleanup in addition to compliance with ARARs. We will be following these remedy selections closely at Headquarters and intend to do all in our power to meet ARARs and other cleanup requirements in the law.

The ARAR policies and procedures will be proposed in the revision of the National Contingency Plan this fall. In this rulemaking process, we will, of course, be considering public comment and will make every effort to see that interested parties have a chance to comment on these interim policies and procedures before they become final Agency policy.

Thank you very much for your strong interest in the Superfund program. Please let me know if you have any additional comments or questions.

Sincerely,

Win Porter

J. Winston Porter
Assistant Administrator

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BAILEY GUARD, MINORITY STAFF DIRECTOR

United States Senate
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
WASHINGTON, DC 20510-6175

July 7, 1987

The Honorable Lee M. Thomas
Administrator
United States Environmental
Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Dear Mr. Thomas:

During a hearing on June 25, 1987 before the Superfund and Environmental Oversight Subcommittee, Dr. J. Winston Porter, Assistant Administrator for Solid Waste and Emergency Response, was asked to withhold issuing interim guidance on applicable or relevant and appropriate requirements (ARARs or cleanup standards). EPA was asked, instead, to issue a proposed rule. This request is consistent with the Agency's actions in similar situations, including those of lesser import. While we reserve judgment that such a formal procedure is necessary or appropriate for matters of lesser import, in cases such as this, where the decisions are of such fundamental importance and affect the rights and liabilities of parties, to follow an informal process would be unwise.

In making this request, we are cognizant of Dr. Porter's testimony that guidance on ARARs would be included in forthcoming rulemaking proposing revisions to the National Contingency Plan (NCP). We firmly believe it to be important, however, especially to those who live in the vicinity of NPL sites, that there be a formal opportunity for public comment on the single, isolated issue of cleanup standards. Rather than risk losing the importance of this issue in the plethora of other provisions that will be included in the NCP proposal, we feel it essential that the ARARs policy be free standing and subjected to public scrutiny.

The keystone of the Superfund Amendments and Reauthorization Act is the section regarding cleanup standards. Cleanup standards decisions substantially affect the scope and direction of the entire Superfund program. They will be determinative of the liability of responsible parties. They will also develop a baseline level of protection for citizens. It is through the proper implementation of this provision that the public's confidence in Superfund can be increased or eroded. To be certain that the program's credibility be increased, those living near Superfund sites, as well as others, must have ample opportunity to review, understand and comment upon EPA's cleanup standards proposal.

The Honorable Lee M. Thomas
Page 2

In order to enhance this opportunity for meaningful public comment, we request that you utilize EPA's Superfund community relations staff. They should assist in making citizens aware of the existence and content of the proposal in a timely manner. We believe that this approach is a responsible way to offer those with the most at stake a real say in their own futures. And we are confident that such an approach will, in the long term, expedite rather than impede promulgation of a final rule.

In the interim, we urge that EPA headquarters work with the Regional offices to develop an appropriate degree of consistency with regard to selection of remedies. Testimony taken during the June 25, hearing indicated that there appears to be disparities across the Regions in the implementation of SARA cleanup standards, permanence and cost-effectiveness provisions.

Your immediate response to this request is appreciated.

With all best wishes,

Sincerely,

John Warner

John W. Warner
Ranking Minority Member
Subcommittee on Superfund
and Environmental Oversight

Frank R. Lautenberg
Chairman
Subcommittee on Superfund
and Environmental Oversight

Robert T. Stafford
Ranking Minority Member
Committee on Environment
and Public Works

Quentin N. Burdick
Chairman
Committee on Environment
and Public Works

Dave Durenberger

Dave Durenberger
Ranking Minority Member
Subcommittee on Hazardous
Wastes and Toxic Substances

Max Baucus

Max Baucus
Chairman
Subcommittee on Hazardous
Waste and Toxic Substances

John H Chafee

John H. Chafee
Ranking Minority Member
Subcommittee on Environmental
Protection

George Mitchell

George J. Mitchell
Chairman
Subcommittee on Environmental
Protection

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 17 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Honorable Frank R. Lautenberg
Chairman
Subcommittee on Superfund and
Environmental Oversight
Committee on Environment and Public
Works
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

I appreciate your continuing concern about Superfund cleanup standards noted in your letter to the Administrator of July 7, 1987. You ask us to withhold issuing interim guidance on applicable or relevant and appropriate requirements (ARARs). I understand that you are specifically concerned about our approach to the use of Maximum Contaminant Levels and Maximum Contaminant Level Goals. I decided to issue the Interim Guidance because issuance of such guidance is important to ensure that the Regions make consistent decisions now. This is particularly important since the Regions intend to complete a large number of Superfund Records of Decisions before the end of the fiscal year.

The ARARs guidance was issued as Interim Guidance. However, we do intend to propose it for comment in the revised National Contingency Plan this fall. In addition, we will:

- Publish the Interim Guidance in the Federal Register immediately for public comment. We will consider what, if any, changes are warranted as a result of this comment process prior to publishing the proposed NCP.
- Utilize community relations staff in the Regions to ensure that citizens around sites both have an opportunity to comment on the guidance and understand its significance for site cleanups.

In your letter, you also asked that EPA headquarters work closely with Regional Offices to ensure consistency of decision-making in regard to selection of remedy. We have made this a priority effort since the passage of SARA, and have held numerous workshop and training sessions with the Regions to ensure a consistent selection of remedy process. We consider the issuance of the Interim Guidance an important part of this process.

Thank you for your interest in the cleanup standards subject.

Sincerely,

J. Winston Porter
Assistant Administrator

QUENTIN N. BURDICK, NORTH DAKOTA, CHAIRMAN
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United States Senate
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
WASHINGTON, DC 20510-6175

June 12, 1987

The Honorable J. Winston Porter
Assistant Administrator for
Solid Waste And Emergency Response
U. S. Environmental Protection Agency
401 M Street, S.W.
Washington, D. C. 20460

Dear Mr. Porter:

The Subcommittee on Superfund and Environmental Oversight has scheduled a hearing on the Environmental Protection Agency's (probable) implementation of Section 121 of the Comprehensive Emergency Response, Compensation and Liability Act (CERCLA)--Cleanup Standards. The hearing will be held on Thursday, June 25, 1987, in Room 410 Dirksen Senate Office Building at 10:00 A.M.

Your appearance before the Subcommittee is requested to provide sworn testimony regarding EPA's development of a cleanup standards policy. The hearing will include a focus on the issues addressed in the congressional letter to the Agency dated March 27, 1987 and the Agency's May 21, 1987 response.

It is requested that you provide to the Subcommittee all documentation (and other matter) including drafts, internal memoranda, briefing and all other materials which are, were, or may have been used to develop EPA's position or direction for implementating the cleanup standards provision enacted in the Superfund Amendments Reauthorization Act (SARA).*

Please make 25 copies of your testimony available to our Committee not later than 48 hours before the hearing and bring an additional 75 copies to the hearing.

Thank you very much.

Sincerely,

Frank R. Lautenberg

Frank R. Lautenberg
Chairman

*The material requested by this paragraph is attached.

1/14/87

DRAFT

In determining the applicable or relevant and appropriate requirements for remedial actions involving contaminated surface water or groundwater, the most important factors to consider are the uses of the water and the purposes for which the potential requirements are intended.

For water that is intended to be used for drinking, the Agency has determined that in general the applicable or appropriate standard shall be the Maximum Contaminant Levels (MCLs) set under the Safe Drinking Water Act. Where the surface water or groundwater being cleaned up will be supplied directly to 25 or more households, MCLs are legally applicable; otherwise, MCLs are the relevant and appropriate standard for actual or potential drinking water.

In certain limited circumstances it may be necessary to apply standards more stringent, or to attain levels lower, than the MCL in question. Such exceptions will depend in all cases on the circumstances of the release at a given site, and are generically described as follows.

Maximum Contaminant Level Goals (MCLGs), while relevant in the consideration of drinking water, are only appropriate where the factors used to derive an MCL from an MCLG are not appropriate to a Superfund site. For instance, if technical or economic limitations for water supply utilities should factor significantly in deriving an MCL, and these limitations do not also apply to the Superfund situation, the MCLG may be more appropriate than the MCL. It is expected that such situations will not occur frequently.

A more stringent Federal water quality criterion may also be found relevant and appropriate when there are environmental factors that are being considered. For example, protection of aquatic organisms may require a criterion level more stringent than the MCL for drinking water.

Finally, where there are multiple significant contaminants in the water at a site, individual contaminant levels may have to be set below the MCL in order to achieve an overall carcinogenic risk level in the range of 10^{-4} to 10^{-7}. Examples of this situation are given in the Superfund Public Health Evaluation Manual.

® Russ:
tie in to use: drinking well-head tap separateR

Clem: MCLs not automatically applicable to GW (H.L.) →
use MCLG as goal toward [but have to attain if appropriate]
Russ would WQC include of mammals? use WQC for SW instead of MCL?
tie in "relevant" whether used for DW – think out if cl 3 or not to be used
in some cases MCLGs approp.; MCLs always approp.
Clem: ® start w/ RCRA subpart F as framework
Russ: ® ¶2 proclaims – need to explain that start w/ MCLs, look at whether MCLG is [illegible]
→ ® add: sentence re quantitation for monitoring – normally approp. for SF too
so look at tech + ac
®

Note to: Arthur, Leo

From: Clem

Re: Comments on ARAR memo

I have listed on the attachement a few marginal comments. I do have some serious concerns about the manner in which the specified water standards section is described. These concerns are both substantive and organizational.

1. As I read the statute, ACLs can continue to be used both inside and outside the facility boundary. The only limitation on the use of ACLs is the use of the exposure criterion outside the facility boundary.

   I therefore think we are making a mistake in distinguishing our policy on the "appropriateness and relevance" of MCLGs and WQC between the facility boundary and outside the facility boundary. Since we can use health based ACLs in both instances, I believe that we would want to argue, in both instances, that where our analysis suggests that a standard set in our risk range (or alternatively an MCL if we use it) is protective of HH and E, that would override the MCLG.

   Conversely, we would argue, that if the groundwater is already clean (either inside or outside the facility boundary) we might find MCLGs of zero to be relevant and appropriate. (I understand that given the way we define facility boundary, we are not likely to find clean groundwater within the boundary, but as a public statement that the outside world can accept, I think that this is a cleaner statement.

2. In describing limitations on the use of ACLs, I believe it is more accurate to say that we cannot allow (outside the facility boundary) a risk level that exceeds health protection requirements based on the fact that no-one is currently exposed, and that institutional controls can contain access to the release, except under limited circumstances.....

3. Given the level of attention that this issue may receive (perhaps I am overreacting to the Inside EPA article) the manner in which we describe the guidance on displaying water standards section is very important. I have outline below what I think is a more logical sequence that will be easier for the outside world to follow (and accept).

   - The CERCLA program uses as its major groundwater protection standard that standard for hazardous waste management units established by RCRA, 40CFRPart164, Subpart F. This standard is background, MCLs, or ACLs.

   - In practice, CERCLA generally takes a site specific approach (consistent with the ACL approach) to determine what levels at a particular site are protective of HH and E. The NCP outlines the selection of health based targets within a risk range of 10x-4 to 10x-7.

   - SARA established some limitations on the manner in which ACLs can be used at a CERCLA site. In addition, SARA asked that CERCLA actions attain MCLGs and WQC when they are relevant and appropriate under the circumstances.

- **This** guidance describes the new limitations on ACLs, and circumstances **under** which MCLGs and WQC may be relevant and appropriate.

- Describe limitations on ACLs

- Then assert circumstances under which MCLGs and WQC may be R and A.

I don't think that we want to get into describing that MCLGs are set at levels where no adverse effects may occur. This simply raises the question as to why we would not want to use MCLGs.

Our point should simply be that MCLGs will be Rand A when we already have pristine water, and setting a health based level that might exceed 0 might allow degradation.

I think we would have a stronger case if we could come up with some additional crteria where MCLGs might be relevant and appropriate. Any of the examples, however, that I can think of get us into trouble, and have significant downsides — (e.g. degree of evidence of carcinogencity, persistence/bioaccumulation of chemical, ability of water systems to treat).

ROUTING AND TRANSMITTAL SLIP

Date 3/26/87

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. Mary Ann Froelich W 1145		
2.		
3.		
4.		
5.		

	Action		File		Note and Return
	Approval		For Clearance		Per Conversation
	As Requested		For Correction		Prepare Reply
	Circulate		For Your Information		See Me
	Comment		Investigate		Signature
	Coordination		Justify		

REMARKS

For tomorrow's MCL/6 mtg.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post) Joe Freedman

Room No.—Bldg. W511

Phone No. 382-7700

5041-102

* U.S.G.P.O.: 1985-461-274/428

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

GROUNDWATER CLEANUP - MCL Approach

Caution: This paper does not address the impact of FWQC on groundwater cleanup. Overlay of FWQC considerations may affect determination of ARARs.

[Bracketed material is optional or commentary]

Summary:

A. MCLs generally will be the applicable or relevant & appropriate requirement (ARAR) for determining groundwater cleanup levels where human ingestion of the water is contemplated. Where EPA is confident that the water will not be ingested, MCLs are not relevant or appropriate. Option III

B. Levels more stringent than MCLs may be imposed [in extraordinary situations] where necessary to protect human health or the environment, e.g.:

1. multiple pathways of exposure
2. multiple contaminants
3. sensitive populations.

Option 1 [C. Those more stringent levels [generally] will be based upon a risk range for carcinogens [and a no-adverse effects level for non-carcinogens??]].

2 [D. EPA will not specify how those more stringent levels are to be set. It could be risk range, or approaching MCLGs.]

3 [E. In some [extraordinary] cases, levels will be set beyond the risk range, as close as possible to zero-effect (and thus MCLGs). E.g., where population already has high exposure to contaminant and/or may be ingesting the contaminant through other sources, EPA may attempt to minimize drinking water exposure as much as possible.]

F. Where no MCLs exist, contaminant levels will be selected for carcinogens so that the risk of cancer after cleanup falls within the acceptable risk range. Non-carcinogen cleanup levels will be chosen so that the threshold for adverse health effects is not exceeded. [This is troubling; why don't we use a risk range here also? The no-threshold level appears to be a no-effects level.]

Rationale:

1. MCLs are set at levels that are safe to drink; [We need to have documentation backing this assertion for all MCLs.] These are legally enforceable numbers that all public drinking water supplies must meet. EPA does not believe that CERCLA funds should be spent to go beyond levels that are safe to drink.

2. MCLs are set within the risk-range (1/10,000-1/10,000,000) that EPA has determined is appropriate for cleanup actions. [We may have to caveat or exempt any MCLs that we do not

say for extraordinary cases use various tools
risk range, MCLGs, etc.

believe are in this risk range.]

3. EPA has traditionally considered MCLs appropriate levels for groundwater cleanup -- see RCRA Subpart F regulations. In adopting "health-based" MCLs, EPA stated: "it assures protection of human health and the environment." 47 Fed. Reg. 32297 (July 26, 1982). Congress enacted the HSWA corrective action requirements with full knowledge (and tacit approval) of the MCL-based approach in the Subpart F regs. important

4. Site-specific conditions, such as multiple contaminants or multiple pathways of exposure, may require EPA to meet levels lower than MCLs in order to ensure that the remedy protects human health. [This will [generally] mean selecting a remedy that falls within the appropriate risk range.]

[5. In some cases, such as highly sensitive populations that have already had excessive exposure to a contaminant or will continue to be exposed through other pathways, EPA may want to approach a level of cleanup that will assure no additional risk to the population. Within the limits of technological feasibility, this could approach or attain MCLGs.]

6. (Option 1 -- corollary of ¶5)

MCLGs are not generally relevant & appropriate because they are based on a zero-risk, or no effects level. MCLGs are developed under the SDWA not as numbers to be met, but as a guide for setting enforceable MCLs. EPA believes that cleanup levels should be based on an acceptable, realistic risk range, such as 1/10,000 to 1/10 million. Although Congress in enacting SARA did call on the Agency to consider MCLGs, the statute requires their use as cleanup standards only if "relevant & appropriate under the circumstances of the release or threatened release." EPA has determined that MCLGs are relevant and appropriate in Superfund remedial actions only where, in situations such as those described in ¶5, protection of human health requires that additional risk from drinking water be reduced as much as possible. However, EPA will of course meet the MCLGs where they are equal to MCLs.

(Option 2 -- assumes ¶5 is not acceptable)

MCLGs are not relevant & appropriate because they are based on a zero-risk, or no effects level. MCLGs are developed under the SDWA not as numbers to be met, but as a guide for setting enforceable MCLs. EPA believes that cleanup levels should be based on an acceptable, realistic risk range, such as 1/10,000 to 1/10 million. Although Congress in enacting SARA did call on the Agency to consider MCLGs, the statute requires their use as cleanup standards only if "relevant & appropriate under the circumstances of the release or threatened release." EPA has determined that MCLGs, which are based on the concept of zero-risk, are not relevant and appropriate for Superfund remedial actions. However, EPA will of course meet the MCLGs where they are equal to MCLs.

ISSUES:

1. Are MCLGs ever the relevant standard? Saying they're not does make legal argument more difficult. Legal argument is helped by statement that MCLGs may be r&a in extraordinary circumstances (such as sensitive populations, multiple routes of exposure, etc.)

2. Are all MCLs safe to drink?
   Are all MCLs within the 1/10,000 to 1/10,000,000 risk range?

   --We need documentation for these assertions.
   --If either or both of the above are not true for particular contaminants, we may want to exempt those contaminants from the policy until we revise their MCLs

3. How do we justify our position that zero-risk is inappropriate for carcinogens, but base our non-carcinogen level on the threshold level? Can the threshold determination be characterized as a risk range?

Briefing for Win Porter
12/18/86

WP: Craft something can bring to Lee ~ guidance
don't say too much
Some case-by-case but don't have to get in box
will need policy memo
– ~~separate~~ ARARs 1 ~~memo~~ – make short
→ wants one pager on dif. ARARs

MCLGs and FWQC as ARARs

Issue

- SARA makes MCLGs and FWQC potentially relevant and appropriate (rather than criteria to be considered)
- May be ARARs for Class I and II groundwaters (drinkable) according to legislative history and Agency groundwater policy
- Based only on health : zero for carcinogens

Problems

- Technical - difficult/impractical to reach zero in aquifers
- Cost - very high due to multiple treatments
- Implementation - may never finish cleaning site (re-open with new detection or cleanup technology)
- Policy - Agency policy on cancer risk based on a range above zero

Options

1) Treat as ARARs; waive out if technically impracticable
   a) use BDAT; or
   b) go to next highest ARAR

2) Include in determination of relevance and appropriateness
   a) technical practicability;
   b) conformance with Agency cancer policy;
   c) possibility for institutional controls (OGC); or
   d) point of compliance (tap vs. aquifer) (OWPE)

3) Use RCRA Groundwater Protection Standards as relevant and appropriate: health-based ACLs MCLGs not for aquifers

Implications

Option 1:	constant use of waivers; indefinite cleanups (under option 1a); more protective
Option 2a:	practicability is a waiver criterion
Option 2b:	Congressional intent (?), public perception, public protection (?)
Option 2c:	frequent use of institutional controls; contrary to groundwater policy?
Option 2d:	Congressional intent; groundwater policy
Option 3:	Where are MCLGs relevant and appropriate?

Lucero: basic policy choices
Hill [illegible]: can't go with zero - impossible w/ changing technology
be clear not considering
Porter: can we ever write decision? — tells no
what about debate about whether can really do?
Mri: don't have to frame argument w/ Hill - directly confront, not frontal assault now

⑦

1/13/87 Briefing for Lee Thomas on MCLG/MCL

LT not sure can make medical/scientific ~~[illegible]~~ distinction between
threshold and non-threshold
why do you want to look behind the numbers? (standards)
WQC - don't use zero, do you? instead, standard-setting process
Cook but some States have "free-from" stds
Russ use MCLs as point of departure for carcinogens
our general goal is to cleanup aquifer to drinkable level; if can't,
well-head treatment or inst. controls
meet MCLGs for threshold chemicals
LT policy: how much do you want to spend to take care of
contaminated GW?
Russ 1) for carcinogens MCLGs not appropriate in any case
2) for thresholds MCLGs are appropriate, can use
LT appropriateness: use, env'l effect
Berry can agree re carcinogens that doesn't make sense because
use risk in other media
LT can you say MCLGs not approp. because not cost-effective of MCLs
Berry could start w/ MCLs, say in limited circumstances go w/ MCLGs
where factors considered for MCL different than in SF
LT MCLG not based on drinking purposes, rather a goal
start w/ MCLs; decide where MCLGs appropriate - where have
env'l effects or factors used in MCL different fr SF - not
sure want to go behind each time
Berry factors: technology, cost
LT don't have to ~~[illegible]~~ reach MCLG for drinking water purposes
i: not appropriate (for carc.)
not cost-effective "
Henry shouldn't do MCL if already treating GW → city (existing controls)
Fisher SDWA stds not legally applic. to GW
LT key is use - incl. future use
important to say these stds are relevant; driven by appropriateness
big debate is on future use
don't want site-by-site debate whether will meet MCLG
define criteria to move lower than MCL
Berry need to leave window open to give meaning to leg
MW won't always have MCL = MCLG

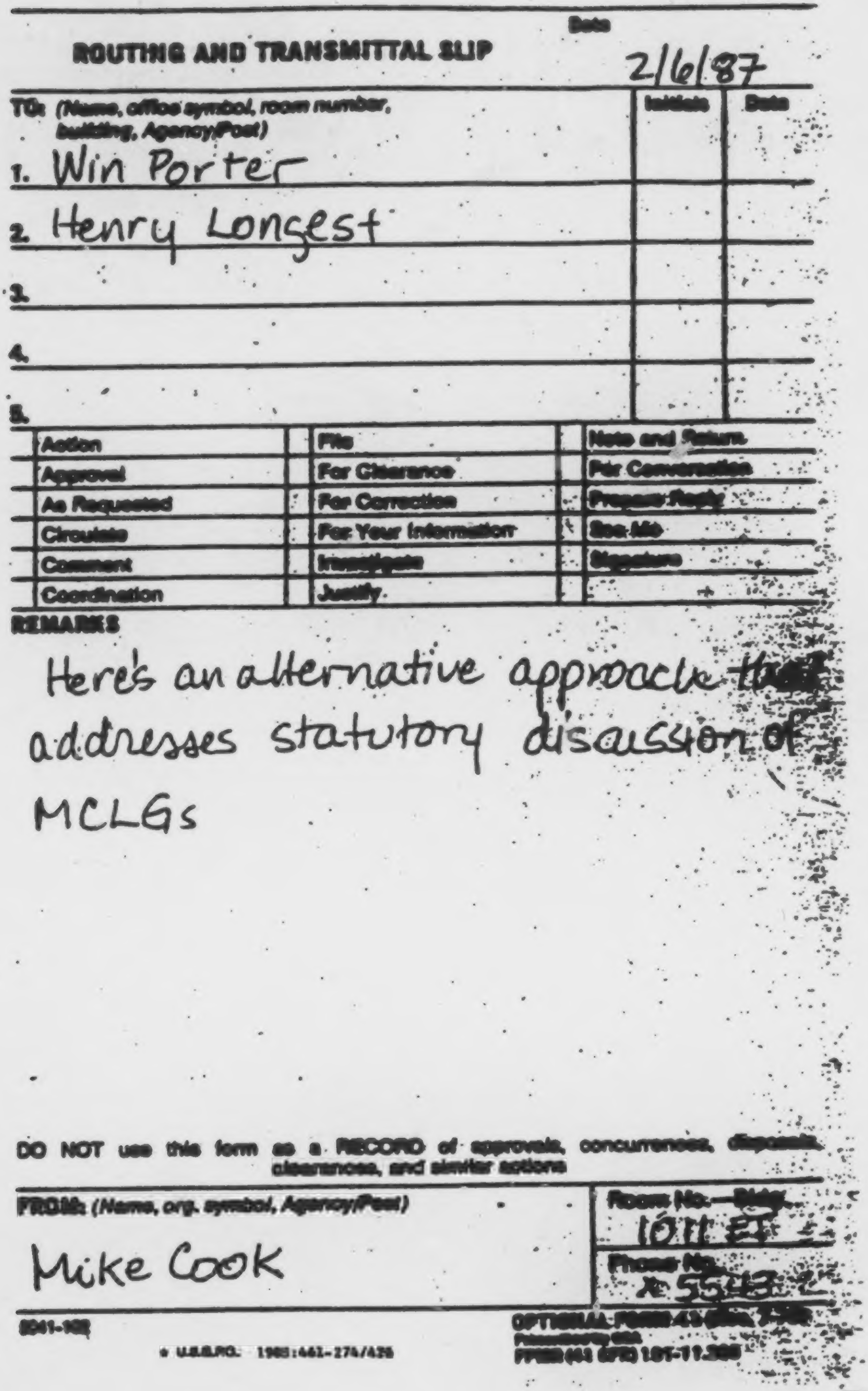
(r2)

12/23/86 Wm via Walt

Don't wrap too many issues into memo to hold up

Will try to be distant f/ memo ~~[illegible]~~ until ready to sign

Be cautious about letting out - be cautious



ROUTING AND TRANSMITTAL SLIP

Date
2/6/87

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. Win Porter		
2. Henry Longest		
3.		
4.		
5.		

	Action		File		Note and Return
	Approval		For Clearance		Per Conversation
	As Requested		For Correction		Prepare Reply
	Circulate		For Your Information		See Me
	Comment		Investigate		Signature
	Coordination		Justify		

REMARKS

Here's an alternative approach that addresses statutory discussion of MCLGs

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post) Mike Cook	Room No.—Bldg. 1011 ET
	Phone No. x 5543

5041-102

★ U.S.G.P.O. 1985:461-274/425

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

2/6/87

(insert on p. 7)

APPLICABLE OR RELEVANT AND APPROPRIATE STANDARDS TO BE USED AS THE STARTING POINT FOR EVALUATING AND CHOOSING CLEANUP STANDARDS

I. For water provided at the tap:

For water that is provided to 25 or more people or supplies 15 or more service connections, MCLs are the applicable at the tap. For water which is provided to fewer than 25 people, MCLs are relevant and appropriate standards to apply at the tap.

II. For groundwater, relevant and appropriate standards are determined as follows:

A. MCLGs and MCLs are both relevant and appropriate for chemicals with non-zero MCLGs.

In cases where the MCL does not equal the non-zero MCLG, local circumstances may be used to choose between the MCL and MCLG when picking remedies and setting cleanup standards. (No such cases are now anticipated.)

B. MCLs are relevant and appropriate for chemicals with MCLGs equal to zero.

In this case, MCLGs are relevant, but inappropriate and technically infeasible to achieve. It is impossible to verify the complete absence of a contaminant because all analytical methods have a finite detection and quantification level. Only permanent treatment could be installed in cases where we are unable to prove reliably the absence of a chemical. We would be forced to treat forever because we would never know when the last increment of contaminant was removed. Alternatively, standards exist which are protective of human health. EPA considers standards protective if excess individual lifetime risk falls in the range of 10^{-4} - 10^{-7}.

Given the impossibility of applying a zero MCLG as a cleanup standard due to the limitations of detection and monitoring, and the existence of alternative standards which are fully protective of health, MCLGs of zero can never be feasible to apply or appropriate even though they may be relevant.

In cases where MCLGs are zero, non-zero MCLs have been developed as practical, enforceable drinking water standards. All MCLs derived from MCLGs of zero fall within the range (of individual lifetime risk of 10^{-7} to 10^{-4}) that the Agency generally considers acceptable. In no case has any detection or non-health related treatment factor caused an MCL to fall outside this range. Therefore, to assure consistent, protective cleanup standards MCLs shall be used as the starting point in determining site cleanup levels.

II. CHOOSING A CLEANUP STANDARD BASED ON APPLICABLE OR RELEVANT AND APPROPRIATE STANDARDS

When MCLs or MCLGs are applicable or relevant and appropriate standards, they should be the cleanup levels usually chosen. However, there are circumstances where departures from the MCL and MCLG starting point may be necessary and acceptable. First, variations from the starting point may be acceptable in situations where an ACL under RCRA subpart F may be granted. Second, variations may be made in cases where the combined risk from multiple pollutants requires a stricter cleanup limit.

DRAFT

GUIDANCE ON APPLYING SPECIFIED WATER STANDARDS

[illegible](A) and (B) explicitly mention three kinds of surface or gr[illegible] standards with which compliance is potentially required - Maxim[illegible]minant Level Goals (MCLGs), Federal water quality criteria (FWQC), [illegible]lternate concentration limits (ACLs). This section describes these [illegible]ments and how they may be applied to Superfund remedial actions.

Background

These three standards or criteria each derive from separate statutes and have different purposes and uses.

MCLGs are derived under the Safe Drinking Water Act as chemical-specific health goals used in setting drinking water standards or MCLs for public water supply systems. Unlike MCLs, MCLGs are based entirely on health considerations and do not take cost or feasibility into account. Moreover, as health goals MCLGs are set at levels where no adverse effects may occur, that is, where absolutely no risk exists. Consequently, MCLGs for chemicals that are probable carcinogens are set at zero, while for non-carcinogens they are based on chronic toxicity data. There are currently 48 proposed or promulgated MCLGs, with more expected soon.

FWQC are developed under the Clean Water Act as guidelines from which States determine their water quality standards. Different FWQC are derived for protection of human health and protection of aquatic life to suit the different designated uses of surface water bodies, on which State standards depend. For Superfund purposes FWQC have been developed for ingestion of drinking water; these FWQC therefore are appropriate only for drinking water supplies. Like MCLGs, FWQC are based entirely on health considerations. Carcinogens are given a recommended level of zero, although the concentrations at a risk of 10^{-6} and at other levels are also calculated.

ACLs are one of three possible standards available under the Subpart F Groundwater Protection Standards of RCRA. For setting both a trigger and a cleanup level for groundwater contamination, an ACL, the background concentration, or a specified concentration limit for a small group of chemicals can be selected for a given site. ~~In the Superfund program, which generally works through the RCRA Groundwater Protection Standard, ACLs are usually set at health-based levels within a risk range of 10^{-4} and 10^{-7}.~~

Stat[illegible] Mandate

SARA [illegible] that remedial actions shall attain MCLGs and FWQC where they are [illegible]nt and appropriate under the circumstances. It further states that for FWQC this determination will be based on the designated or potential use of the water, the media affected, the purposes of the criteria, and current information.

SARA limits the use of exposure-based ACLs (that is, those above health-based levels) to within a Superfund facility boundary unless the groundwater discharges into surface water and does not cause a statistically significant increase of contaminants in the surface water. To apply such an ACL outside the facility, moreover, measures must be enforced to prevent use of any contaminated groundwater.

BEST AVAILABLE COPY

DRAFT

Application

In determining the applicable or relevant and appropriate requirements for remedial actions involving contaminated surface water or groundwater, the most important factors to consider are the uses of the water and the purposes for which the potential requirements are intended.

The actual or potential use of water, and the manner in which it is used, will determine what kinds of requirements may be applicable or relevant and appropriate. For Class III-type groundwater that cannot be used for drinking because of high salinity or severe contamination, drinking water standards are neither applicable nor relevant and appropriate. ~~If the groundwater or surface water is always treated at the well-head or at a treatment facility, drinking water standards apply at the tap. Groundwater or surface water that is directly used for drinking must, however, be cleaned up to drinking water levels.~~

Replace with attached text

~~For contaminated groundwater, the applicable or relevant and appropriate standard will generally be the RCRA Groundwater Protection Standard (Part 264, Subpart F). The Groundwater Protection Standard allows setting a level at background, at a protective alternate concentration limit (ACL), or, for a small set of chemicals, at a specified concentration limit. For Superfund purposes the ACL is generally most appropriate, based on the use of the groundwater.~~

~~For water that is intended to be used for drinking , the point of departure for setting an ACL should generally be the Maximum Contaminant Levels (MCLs) set under the Safe Drinking Water Act. Of course, where the groundwater being cleaned up will be supplied directly to 25 or more households, MCLs are legally applicable. Otherwise, MCLs are generally the most appropriate standard for actual or potential drinking water.~~

~~In certain limited circumstances it may be necessary to apply standards more stringent, or to attain levels lower, than the MCL in question. Such exceptions will depend in all cases on the circumstances of the release at a given site, and are generically described as follows:~~

~~Maximum Contaminant Level Goals (MCLGs), while relevant in the consideration of drinking water, are appropriate only where none of the factors ~~used to derive~~ an MCL from an MCLG are appropriate to a Superfund site. Normally, the determining factor in setting an MCL from an MCLG is the detection limit for monitoring, and this limit will generally be appropriate for Superfund purposes as well. Where technical or economic limitations for water supply utilities should factor significantly in deriving an MCL, and these limitations do not also apply to the Superfund situation, the contribution of these factors to setting of the MCL should be discounted. If none of these factors is appropriate, the MCLG would be more appropriate than the MCL. It is expected that such situations will not occur frequently.~~

Move to p. 8 at ☆

A more stringent Federal water quality criterion may also be found relevant and appropriate when there are environmental factors that are being considered. For example, protection of aquatic organisms may require a criterion level more stringent than the MCL for drinking water.

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~~Finally,~~ Where there are multiple significant contaminants in the water at [illegible]site, individual contaminant levels may have to be set below the MCL in ~~order~~ to achieve an overall carcinogenic risk level in the range of 10^{-4} ~~to~~ 10^{-7}. Examples of this situation are given in the Superfund Public Health Evaluation Manual.

☆ →
Insert from p 7

* * *

Further Information

For further information on the subjects in this interim guidance, contact Steve Smith (FTS-382-2200) or Arthur Weissman (FTS-382-2182) of the Policy Analysis Staff, Office of Emergency and Remedial Response.

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2/13/87. Meeting with Wm Porter on MCL/MCLGs

Cook   nothing in public record that would allow to say a
        factor is determining - gumbo
        started being more explicit
        should just rule out zero as inappropriate because can't
        demonstrate have achieved, impossible to meet

Porter   OSWER GW approach:
        rarely find tech/cost factors not appropriate
        so generally use an MCL
        can't reject for RCRA just because cost included
        this chart says MCLG = 0 is inappropriate
        will give something to Lee tonight

Lucero   use legal argument of impossibility

HL: do 2 options - OERR
appropriate/impossible

ERIv Joe Cotruvo
Craig Vogt

Ⓒ

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 3 1987

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Ground-Water Cleanup Standards

FROM: Michael B. Cook, Director Mike Cook
Office of Drinking Water (WH-550)

TO: Marcia Williams, Director
Office of Solid Waste (WH-562)

I have reviewed Win Porter's memorandum of January 30, and I am quite concerned with OSWER's leaning toward Option II. While the position preferred by OSW has evolved in the course of our many discussions of these issues, the suggested Option II has many of the problems associated with the earlier OSW positions. It also has a new problem: MCLs would be second guessed by formal regulatory action under RCRA rather than case-by-case.

Option II would rule out any MCLs which consider costs or other factors that "aren't relevant" for RCRA. In effect, this would rule out all MCLs for carcinogens and would only include MCLs for non-carcinogens for which the MCL would be equal to the MCLs. EPA cannot formally take the position that we have not considered the factors that we are required to consider by law in setting MCLs. Moreover, EPA's current approach to MCLs for carcinogens (the "gumbo" approach) would state that a range of factors was considered but would not clearly identify the determining factors.

The factors listed in the memorandum as disqualifying MCLs for use by OSW would play a role in the MCL for any carcinogen. We must find that the costs are affordable by public water systems. We consider the numbers of systems affected as part of the real-world impact of our actions on the regulated community and on the institutions that implement them. We also consider the ability of analytical methods to quantify (not just detect) the contaminants reliably; as far as I know, both our programs have access to the same analytical methods.

The practical result of eliminating factors not considered relevant to RCRA would be to produce a more stringent standard in every or virtually every case. We would then have to explain why the MCL was safe at the tap but insufficient to protect human health when in the ground water.

The basic point not accounted for in Option II is the one I have personally emphasized throughout our discussions; with possible rare exceptions (which do not yet exist), the MCLs are protective of human health. They are not simply technology-based standards. We, therefore, prefer Option I.

I can see merit in identifying at the outset the rare cases in which MCLs might not be appropriate, rather than having to repeat the argument for each site. I also feel the description of the Options does a good job in describing the circumstances in which deviations, either more or less stringent, would be allowed.

cc: Rebecca Hanmer
George Ames
Henry Longest
Brooks Bowen

SUPERFUND IMPLEMENTATION

Manpower and Program Delay Issues

THURSDAY, JULY 23, 1987

U.S. Senate,
Committee on Environment and Public Works,
Subcommittee on Superfund and
Environmental Oversight,
Washington, DC.

The subcommittee met at 9:32 a.m. in room SD-406, Dirksen Senate Office Building, Hon. Frank R. Lautenberg, Chairman of the Subcommittee, presiding.

Present: Senators Lautenberg, Baucus, Warner, and Pressler.

OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator Lautenberg. Good morning. We will call the Subcommittee on Superfund and Environmental Oversight to order. I would ask that the first panel come up; that would be Mr. Wessinger, who is the Senior Associate Director, Resources, Community and Economic Development Division, U.S. General Accounting Office; Mr. Lawrence J. Dyckman, who is the Group Director, and Mr. Tom Storm, who is the audit manager, and I would ask you to just bear with us a minute.

This is the fourth in a series of Superfund oversight hearings which began in mid-April. Today, we will address two topics: One is EPA's manpower needs and the concerns, and the other tries to get at the question of why does it take so darn long to get a Superfund site cleaned up?

Together, these issues go to the heart of the program. By now, most of us expected to see the tools, the picks, the shovels, the backhoes in the ground all over America, cleaning up our land. Everybody knows it is just not happening as we had anticipated.

I have been looking closely at EPA's management of the Superfund, and I have been looking for flaws in the management and the implementation, and I have been pointing to problem areas, and we are going to continue to do that here today. My goal is simple. It's not different than anyone else's, in this room or across the country, who wants to see the program move.

The question is: Why isn't it? What can we do to improve the program, to move it forward quickly and efficiently. Today we are talking about issues that go to the heart of the Superfund, and the General Accounting Office is going to be discussing a draft report it has just issued to EPA regarding Superfund staffing.

74-567 0 - 87 - 17

It surveyed employees, both past and present, and it may have uncovered Superfund's Achilles' heel. Compared to the Federal work force, Superfund staffers, on average, are very young and in a disturbing development. They are not staying put. Turnover has doubled. The quit rate among Federal hydrologists in the Superfund program is six times the Federal average.

Geologists have a quit rate three times the Federal average, and let's disabuse ourselves at the outset that all of the turnover had something to do with the inordinate amount of time that it took to reauthorize the program. That may have had a small role to play, but even after reauthorization, in March of this year, GAO is going to testify that about one-third of the staff has said that it intends to seek other jobs. Just think what a significant staff loss will mean to the Superfund program.

Frankly, I am surprised, because I would have thought that the employees at EPA dealing with the Superfund would have been much more discouraged in the earlier period when Superfund I was about when there were serious questions as to whether or not there would be a Superfund II and whether the program would continue, and certainly, at a different level of resource than Superfund I, to use the expression, originally had.

I am very concerned also about consultants and contractors raiding EPA's staff. I am concerned about conflicts of interest that might arise in a job shift, and I am concerned about just the perception of impropriety. I am concerned that EPA's accountability will be in question if it loses its experienced staffers.

I want to see a plan. The agency simply has got to make sure that it retains its senior Superfund managers and staff or has adequate plans for their replacement. Given the government pay scales and other impediments, it is not an easy task.

Perhaps time, EPA-style, is the greatest enemy of Superfund. The agency has created a remedial program which takes an average of 6 to 10 years from discovery to clean-up of the site, and that is, obviously, too long. We are talking about 2 years to get a site on the NPL, on the national priority list. It takes an average of 28 months for a RIF, remedial investigation feasibility study to get done, and 18 months for a remedial design.

Construction can take 2 to 4 years. For Superfund enforcement, the achievement of settlements has taken an interminably long time. I am compelled to say that I don't think that people across the country or that the Congress expected the lengthy process that has been created.

I can revisit with you the hundreds of millions of dollars which EPA says are right for recovery and fund replenishment, but nobody at EPA or Justice seems much interested. I could tell you about a lot of money spent for sample analysis, some of which need not have been spent.

Money in contract lab capacity could have been saved for additional new Superfund work. Those are the issues we face today. EPA's attitude and response to them is really the key to Superfund, to the Superfund program which we passed last year.

I hope that EPA and this Subcommittee can agree today to work together to reduce Superfund's time frame and costs. We owe it to the American people to give them what they bargained for and what they thought they got when Superfund II or SARA was signed into law.

It is customary practice that the witnesses, before oversight committees, provide sworn testimony. So I would ask you now to stand and raise your right hand and ask do you solemnly swear that the testimony that you will give before this Subcommittee is the truth, the whole truth, and nothing but the truth, so help you God?

Mr. STORM. I do.

Mr. WESSINGER. I do.

Mr. DYCKMAN. I do.

Senator LAUTENBERG. Please proceed. I want to point out before we take any testimony that the hearing record is going to remain open for a period ending 2 weeks from today for the purpose of receiving questions from Senators for submission to the witnesses.

In addition, the record for the hearing held by the Subcommittee on June 25th shall be reopened until Friday of this week for the purpose of any Senator who wants to submit questions for the witnesses. The Subcommitee is going to try to cover a good deal of ground today, and we would appreciate it if all of the witnesses could provide succinct testimony and responses to the questions.

With that I would ask you, Mr. Wessinger, to proceed with your testimony.

STATEMENT OF HUGH J. WESSINGER, SENIOR ASSOCIATE DIRECTOR, RESOURCES, COMMUNITY AND ECONOMIC DEVELOPMENT DIVISION, U.S. GENERAL ACCOUNTING OFFICE, WASHINGTON, DC, ACCOMPANIED BY LAWRENCE J. DYCKMAN, GROUP DIRECTOR; AND THOMAS STORM, AUDIT MANAGER

Mr. WESSINGER. Thank you very much, Mr. Chairman. I would just like to introduce my associates which you have already done, but just to describe a little bit about their roles and their work on this particular assignment. On my left is Mr. Larry Dyckman. He is in charge of all of our work involved in the Superfund area. On my right is Mr. Tom Storm. He was the Evaluator in Charge and responsible for day-to-day management of the study that we are going to discuss with you today.

I have a prepared statement that I will submit for the record, but I will summarize. Hopefully, I can keep it to about 6 or 7 minutes.

Senator LAUTENBERG. Thank you.

Mr. WESSINGER. The Environmental Protection Agency's Superfund program faces the task of cleaning up perhaps thousands of sites contaminated by hazardous wastes. To do so, EPA will need the services of various skilled personnel in scientific and technical fields. Concerned that EPA may face a shortage of skilled staff, the Congress, when it reauthorized and amended Superfund in October 1986, directed that GAO study: One, the types and extent of skilled personnel shortages in the Superfund program; two, employee turnover; three, pay differentials with the private sector; and four, employee training needs.

We have completed our study and have sent the EPA a draft of our proposed report so that we can obtain and consider the Administrator's comments before we issue our final report to the Congress. Mr. Chairman, we are pleased to be here today to discuss our tentative findings.

Before getting into our findings, let me give you a little background information on EPA and our study. In fiscal year 1986, EPA used over 3,800 people on Superfund working the full-time equivalent of 1,643 employees. These employees came from over 120 occupations, of which more than half were engineers, scientists, lawyers and other technical specialists. To obtain information on the many issues in our study, we relied heavily on questionnaires and interviews with these employees. In total, we received questionnaire responses from about 700 current and former Superfund employees in the technical and scientific occupations and interviewed 55 program managers at EPA headquarters and at six EPA regions.

Concerning staffing and skill needs, our survey of Superfund employees showed that about 80 percent worked in units that they believed were understaffed in early 1987. Employees perceived that the program was understaffed by about 36 percent, or from 375 to 600 positions—full-time equivalents—at that time.

At the regional offices, program managers generally told us that they were short of staff, including project managers, on-scene coordinators, hydrologists and toxicologists. Program managers also said that such staffing and skill shortages delayed and impaired the quality of Superfund activities.

EPA management in Washington concurred that shortages, no doubt, existed in early 1987, but they noted that staffing has since been increased considerably. Congress authorized EPA to use an additional 773 Superfund positions for fiscal year 1987 over and above the 1,643 that EPA used in fiscal year 1986. If they had been fully used, these positions should have been sufficient to alleviate perceived shortages. However, EPA expects that a considerable number of these positions will go unused during fiscal year 1987.

Our review of EPA's work force planning system raises questions, however, about the reliability of EPA's estimated staffing requirements to carry out planned Superfund activities. EPA relies largely on managers' judgment of the time required to carry out various Superfund activities in establishing the program's staffing requirements. EPA, however, has enough experience in operating the program to compare estimated requirements to the actual time spent by employees in performing various Superfund activities.

Similarly, EPA does not use productivity measures to help gauge how effectively and efficiently it is using its Superfund staff. EPA has the data to evaluate Superfund productivity and the use of productivity measures would help EPA to evaluate differences between its regional offices in the type and size of work force and methods of operation used to carry out Superfund activities.

Looking now at employee turnover, the first of the three charts that we brought with us today shows that the rate at which EPA Superfund employees left the program was below the rate for all Federal employees in fiscal years 1984 and 1985. The Superfund rate more than doubled between fiscal years 1985 and 1986, from 2.9 to 7.2 percent, surpassing the overall Federal rate of 5.2 percent.

Most of the Superfund managers we interviewed expected that the turnover rate to increase as the private sector lures even more employees away from the program. Our review confirmed this point, showing that over one-third of Superfund employees planned to look for other jobs during 1987.

We asked former Superfund employees to rate 17 reasons for leaving the Superfund program. As our second chart shows, more advancement opportunities was the reason most often cited for leaving.

Concerned with limited advancement opportunities, EPA revised its policies in October 1986 to make project managers and on-scene coordinators eligible for higher salary grades when warranted by the size and complexity of the sites managed. EPA has also designed separate career paths to enable chemists and general physical scientists to obtain higher grades without having to move into management positions.

Senator LAUTENBERG. Excuse me, Mr. Wessinger. What is the last category, "major reason and definitely stayed"?

Mr. WESSINGER. Disillusion with clean-up progress.

Mr. STORM. Senator, do you mean the last column?

Senator LAUTENBERG. Yes.

Mr. STORM. The last column means those individuals that said not only was this a major reason, but they said, "If conditions had changed, we would have stayed in the Superfund program."

Senator LAUTENBERG. The caption is not good.

Mr. STORM. We are limited on space there.

Senator LAUTENBERG. Okay. Major reason.

Mr. WESSINGER. According to the Annual Report of the President's Pay Agent, Federal civilian pay in general needed to increase by about 24 percent as of March 1986 to achieve pay comparability with the private sector. Our third chart shows that the pay for Federal attorneys, chemists and engineers, the three key Superfund occupations, trailed those in the private sector by $7,800 to $41,300, or from 25 percent to 68 percent, as of March 1986. In addition, our survey showed that former Superfund employees who took private sector jobs received pay increases averaging $7,200.

EPA is considering ways to improve Superfund compensation through bonuses and added fringe benefits. As a general rule, we have opposed separate pay systems for specific employee groups, suggesting instead that any changes focus on resolving perceived inequities in pay systems that exist for all Federal employees. This approach minimizes pay inequities within the Federal government and precludes providing one agency with a competitive advantage over others in recruiting the same employees.

The final area we reviewed was Superfund training. Our surveys showed that about 60 percent of current employees believe that they needed more training to carry out their Superfund responsibilities. Areas include clean-up design and action, cost recovery and legal case development.

Aside from needing more training, about half of the current Superfund employees were satisfied with the training they had already received. Many identified problems with the course content and delivery, management commitment to training, and the time employees have available to attend training.

EPA has developed a 2-year plan and drafted policies to improve its Superfund training program. When fully implemented, they should help EPA to meet employee training needs.

Mr. Chairman, let me just briefly recap our major findings.

We found that the Superfund program was likely understaffed in early 1987 and that the staffing increases for fiscal year 1987 should have been sufficient if fully used to alleviate these shortages. We also found that EPA can improve Superfund work force planning by better estimating staffing requirements and analyzing productivity. Our draft report includes proposals to the Administrator to deal with these issues.

While Superfund employee turnover has been increasing, EPA has taken some action that may help to reduce this trend. The pay comparability obviously affects turnover, but we do not favor special pay systems for individual programs or agencies because of an equity problem this could cause within the government.

Lastly, EPA needs to upgrade its Superfund training program to better meet employee training needs and it plans to do this over the next 2 years.

Mr. Chairman, this concludes my summary. We will be pleased to answer your questions at this time.

Senator LAUTENBERG. Thank you very much, Mr. Wessinger.

The picture you present is not one that is very encouraging, except in your final note, when you say that the EPA is developing a program to improve its Superfund training. The interesting thing is that I find whenever we look at the problems that we have retaining employees in the Federal Government, getting them committed enthusiastically to the task, we found out, I think, that people really do want to do their job.

I came from the private business sector, and I, too, heard so much of the progadanda that runs around about Federal employees not doing their job, not really getting the kind of productivity that you find in the private sector, not having the kind of dedication that one assumes that you have in the private sector. I would have to tell you, I have been here now just over 4 years, and I am pleased at what I see from Federal employees.

I think they are very committed to their job. I think they, though frustrated in many ways, have an even deeper commitment than we traditionally find in the private sector. It takes a certain kind of understanding to get someone into the Federal employee sector. I find that it is different than one traditionally sees in the private sector. I find that people are willing to take less and often to do more; that people are satisfied if they have an opportunity to do their jobs properly; and that one of the demands that they make, and I see it consistently in the things that you say and that I have heard before, is that when they feel that they need tools to do the job, it is because they want to do a better job and that when they are frustrated, when they are disappointed that they are not getting either the training or the resources to do their job.

It was interesting to see that enumerated among the reasons for turnover. It was not simply yes, sure, people want to make more money, and sure, people want to have more job security. Sure, they want to be able to see progress in the things that they do. But they also feel that if they have a job that requires training and the tools to do it with, they consider that unless they get that that they are not doing their job completely.

It is interesting to see it. I would encourage all government agencies, not just EPA and its Superfund division, to get on with the task of trying to provide those tools and anticipate what is needed in advance of the crises that we see here in other parts of government.

One of the problems that was highlighted, a very serious cause for lack of employee retention, was the private sector lure, and one of the things that concerns me is that we not be providing simply a training ground for private sector employment. We can't be in that position. We, the government, cannot be in a position where, as we give people training, we are inviting companies, contractors, et cetera, to take them away from their positions.

Though I don't think it is a GAO responsibility, one of the things that we have to concern ourselves about is whether or not there ought to be some kind of a prohibition from going from EPA, from Superfund employment, right to the private contractor sector, because it does invite conflicts, as we see it; it could invite conflict in that we will see employees dealing with former colleagues and associates. It presents an employment that I don't think is particularly wholesome.

In parts of the government, in State government in New Jersey, there are some departments where an employee is absolutely prohibited from doing anything to represent that particular industry.

Do you have any thoughts that relate to the luring or to the attraction to the private sector from government and why this is and whether EPA is doing anything of substance to retain its staff?

Mr. WESSINGER. Let me just comment on it briefly. I think that in an industry such as the cleaning up of hazardous waste sites, which is a growing industry, and as a matter of fact, it is such a large program, that it is more likely that industry will be able to attract employees from such a program because it is a growing industry and everybody seems to be trying to get into it. So I think it is definitely a problem for a new industry.

The primary reason that we found for people leaving was for more advancement opportunities, and I think that has to be tied indirectly to the pay gap that we experience in the government. We certainly don't advocate setting up a special pay system for them, until the government decides how it wants to deal with the overall pay gap.

Senator LAUTENBERG. But that is not a unique problem to EPA and Superfund; it runs throughout government. It runs with people who are employed in the defense establishment. It runs through other departments, as well. Yet we see EPA exceeding the norm in terms of loss-of-employees, and I have got to ask you why do you think it is unique to this department?

Mr. WESSINGER. I think that is a good point that we need to emphasize here. EPA did lose employees at a higher rate from 1985 to 1986 than the government as a whole. But I think there might be a good reason for that. For a year or a year and a half, they were quite unsure as to how Superfund would be reauthorized until October of 1986. While this is purely speculative on our part, we feel that that is a part of the reason that the employees were leaving that program at the time; they were just uncertain as to what form the program would take when it was finally passed.

Senator LAUTENBERG. To your knowledge, does the Federal Government have special pay scales for some skills that it needs, engineers, for instance?

Mr. STORM. Yes. The government has special pay rates for engineers that apply to all engineers, and the engineers in the Superfund program receive those special rates.

Senator LAUTENBERG. Are we saying that engineers are a more critical skill for us than hydrologists or geologists or some of the other relatively limited supply professions?

Mr. STORM. Well, special pay rates are approved by OPM, so they are not only looking at Superfund, they are looking at overall Federal needs when they go ahead and approve these special pay rates, although I am sure there are instances where they have approved rates for occupations that are more peculiar to a specific agency. But in the case of engineers, it has been deemed to be a problem of the magnitude that affects most government agencies.

Senator LAUTENBERG. We will ask the EPA, when they are up, whether or not they have significant problems with recruiting and retaining the other skills, as well, because one thing we want to do is solve the problem. We don't mind pointing out our difficulties, but we also have to think together of ways to solve it. Though I heard you say, Mr. Wessinger, that it is not a good idea, and I agree with you.

Mr. STORM. Senator, turnover rates were lower for the engineers, and there is nothing to say that hydrologists would not be eligible for special pay rates if the gap was significant enough that OPM felt they should be warranted. It would just seem that no initiatives were taken yet to apply for those rates.

Senator LAUTENBERG. We should find out whether or not the shortages are serious or whether they are just part of the overall structure. We have got to look to the fundamentals of EPA and see what their problems are.

To what extent would you say that these manpower shortages adversely affect the quality and the speed of the work of the Superfund staff?

Mr. WESSINGER. It is really hard to quantify. Our survey showed that about 38 percent of current employees had a problem between January 1986 and March 1987 in assuring the quality of the Superfund tasks on which they worked because of the lack of skilled personnel to carry out the work.

They told us at the time we were doing this that it did delay their efforts in completing the Superfund, but they were unable to quantify how much.

Senator LAUTENBERG. In January of 1986, we had an expired program. If we do an evaluation that covers January 1986 to March 1987, we are dealing with quite a different condition. I don't know that surveyed results covering that period of time would really tell you what the current problem is. We are concerned about what is happening right now.

Things have gotten worse rather than better after Superfund II, after SARA was put into place, the funding level was raised to $9 billion, roughly, and a whole series of changes. It would seem to me that that would be a time not only of raised morale, but, the view of the job, view of opportunity should be considerably improved.

And yet we have seen essentially the reverse of that. Has it gotten worse if we look at that period of time in these last months. Your survey was done in March of this year?

Mr. Wessinger. From January to March of 1987.

Senator Lautenberg. Again, this is after Superfund II was signed into law; the funding levels were approved, et cetera, though not put in place, but certainly targeted.

So why do you think it got worse?

Mr. Dyckman. If I might just take a crack at that, Senator. One of the things we were told by regional program managers is that some of their staff actually burned out. It was just the straw that broke the camel's back in terms of their workload, and that was one of the reasons they told us that the 1986 turnover rates were so much higher than the 1984 and 1985 rates.

I think you have a good point in terms of that while the law was reauthorized, it is not clear whether or not the reauthorization of the program has stemmed the problem.

Senator Lautenberg. We are 6 months after the survey was begun. You have no idea, have you, whether the trend currently, the months of June and July, for instance, is consistent with the period during which you surveyed?

Mr. Storm. No, we don't have that information. We will readily admit that when you do surveys such as the one we did with a questionnaire, it is kind of a snapshot of the situation at that point in time. It very well could have gotten worse by now.

Senator Lautenberg. You say that EPA received 773 positions for fiscal year 1987. That would exceed the 600 person staffing shortage that was identified in your report.

You also said that EPA didn't expect to use a considerable number of these positions because of the short time the agency had available to fill them. Would you expand on that comment, that EPA received 775 for this year and still, with the funding available, may not fill them?

Mr. Wessinger. Yes. Generally, EPA allocates staff resources to its regions about 6 months in advance of the fiscal year in which those resources are to be used based on this budget submission.

This allows the region sufficient time to gear up to bring employees on board before the fiscal year begins. EPA, however, had not requested a staffing increase in this fiscal year 1987 budget request because of reauthorization problems, and therefore, the regions did not have the necessary lead time.

Moreover, the additional resources that were provided in October 1986 for fiscal year 1987 were not allocated to the region until March 1987, or until almost half of the fiscal year was over, so that caused the problem in trying to bring all those people on by the end of the fiscal year.

Mr. Dyckman. I might add, EPA expects that it will hire only about half of the 773 positions, a little over half. Quantitatively, that is what they told us.

Senator Lautenberg. That is a big shortfall.

Mr. Dyckman. Yes.

Senator Lautenberg. The 775, that wasn't your figure, I assume?

Mr. DYCKMAN. No.

Senator LAUTENBERG. Is that figure a reasonable target to get the job done with? Did someone grab a figure out of thin air and say, "Well, this is what we would like to put on the team"?

Mr. DYCKMAN. That is what Congress authorized for an increase for fiscal year 1987. If you are raising the $64,000 question in terms of does EPA have enough staff to do timely clean-ups with what they are authorized and if they could fill all their positions: I don't think we have an official GAO answer to that.

It is a very difficult question. I guess we all have our own personal opinions based on what we have seen and what we have heard. I think you could make the argument that if they had more staff, they could do the job quicker, although you have to take into consideration that the Superfund program, as far as EPA is concerned, is basically a monitoring program. They don't do the clean-ups. They don't do the remedials and the removal actions. They have contractors, the States, and the Corps of Engineers that actually do the work.

Based upon what we have seen in the regions on this review and on other reviews we have done on the program, EPA is stretched to the limit.

It is difficult to say whether, even if they were able to hire all these additional people, whether or not they can get the job done quick enough to protect the public.

Mr. STORM. Senator, I would add that EPA did prepare an operating plan for fiscal year 1987, which showed they would fully use the staffing levels that the Congress authorized, and I suspect that if there is a shortfall, then they also, might miss some of the targets that they planned on accomplishing as a part of that plan.

Senator LAUTENBERG. Did that staffing plan use the 775 as a number?

Mr. STORM. That was incorporated in the plan; the actual total FTEs, full-time equivalents, was in the neighborhood of 2,400. That would have included the 773.

Senator LAUTENBERG. The productivity measures in manpower models are relatively common. I would like to ask you two questions: One, does EPA use that kind of a process for determining its needs, and if not, why not?

Mr. STORM. Senator, no. EPA does not have them. We have not been able to find productivity measures that they use in their program. Productivity, as you know, is where they would be comparing the outputs that they expect to accomplish against the inputs, and we have not found that. We think good management would dictate that you have those things and we are somewhat surprised that they are not there.

Senator LAUTENBERG. Do you want to repeat what you just said, good management practices would dictate?

Mr. STORM. Good management practice would seem to dictate that you have those measures there, and they're not there.

Senator LAUTENBERG. I think the one thing that we agree on, is how slowly the pace has been compared to expectations. Is it realistic to have had the goals that we think were attainable?

Would you tell me whether or not you think that there has been the kind of effort necessary, to use the expression that EPA likes to use, a "ramping up" to get this task done, the fact that EPA or Superfund employees themselves don't do the digging, so to speak? Nevertheless, there is a structure that is required to make sure that contracts are let properly; to make sure that the technique used for clean-up is an appropriate one; to make sure that our responsible party recovery is done as efficiently and as completely as possible. There are a whole series of things that do require substantial staffing.

The fact that I am responding, Mr. Storm, to your comment, the fact that this is a monitoring agency doesn't mean that you can do more with less. I mean, they are fighting to find an adequate number of contractors; we are fighting to create a competitive environment to make sure that the costs are as low as possible for the tasks that are being assumed.

There has been criticism of that. There has been criticism of the way that the State programs are being handled. There have been abuses detailed of contractors charging excessive premiums for various tools used, as well as overtime.

Why is it, do you think, that EPA hasn't jumped to the staffing assignment that it has in order to get this job done? I assume we can conclude from your testimony that it hasn't. Is that fair?

Mr. STORM. It would appear, Senator, that the staffing is not there to carry out the program. That is certainly what employees have said, and we have no reason to think that the situation has gotten any better.

Senator LAUTENBERG. By the way, through this, is it fair to assume from your experience that because of a high quit rate, because of high turnover, that there is a morale problem?

Mr. STORM. That does add to the situation, yes.

Senator LAUTENBERG. There is a morale problem.

Mr. DYCKMAN. I might add that we did ask employees whether they are generally satisfied with their jobs, and on whole, they are satisfied. They believe in Superfund.

Senator LAUTENBERG. Those who stayed. Those who go, obviously, did not leave a satisfactory position.

Mr. DYCKMAN. Even those that left. Tom, correct me if I am wrong.

Mr. STORM. They were basically satisfied with their jobs.

Senator LAUTENBERG. They left with some reluctance?

Mr. DYCKMAN. They left with some reluctance. They still believe in the mission of the program, and I think we all do.

Senator LAUTENBERG. That is characteristic, then. That is really a compliment to the people who work for the government.

Mr. STORM. I think it goes to the advancement opportunities, the monetary issues and the overall feeling that many Federal employees have that they are treated as second-class citizens.

Senator LAUTENBERG. Okay. I am a Federal employee, and I agree.

The thing that I would, however, say, is that some part of this, and I have substantial experience, having run a very large company, in excess of 15,000 employees when I left, that there is a management responsibility to respond to the employees' needs; to respond to the salary problem, if possible; to respond to the fulfillment problem; to respond to the training problem.

If these things are done, retention invariably gets better. If these things are done, because, if, again, it was market rate employment that people were looking for, they would have found that a lot earlier; they wouldn't have come to the government, often, in the first place.

So, again, why hasn't it been done? Is there anything that you sense that you are willing to state here for the record that has kept EPA from fulfilling its requirements or from fulfilling its mission?

Mr. STORM. I think it is basically a good question, and I think it is a good question to be asking of EPA.

Senator LAUTENBERG. You are the impartial observers.

Mr. DYCKMAN. Let me just comment that I think that what we have observed on this assignment and on other reviews, is that EPA is under a lot of pressure to spend money and to clean up sites. In doing so, there are some built-in inefficiencies in terms of operating a large logistical program like this.

I think EPA is also somewhat reluctant to ask Congress for a whole lot of more people, because they are not convinced themselves that they could manage a larger program.

Again, This is a question you may want to ask EPA in terms of what they would do if they had more people.

Senator LAUTENBERG. Maybe OMB has convinced them of that position, because the fact is that they have, based on the authorization in the legislation, the ability to hire substantially larger numbers; they have a commitment. There is a number of starts that they have to get to. There is a very specific assignment.

We were accused in the Congress of micromanaging this program, and that came about as a result of the frustration of not seeing much progress in the first 5-year experience: Six sites, five sites, argue it one way or the other, and 1 billion 600 million later and precious little has happened. It doesn't look like enough was left over as a result of that experience to get us on a fast start for the second phase of this.

So the conclusion that I come to, and I will ask you and we will turn over to Senator Baucus after that, I would ask you if you can see, in management attitudes, based on the facts that you have analyzed, based on the surveys that you run, that perhaps there is a reluctance, of foot-dragging, because there is, perhaps, disagreement with the mission or because there is a disbelief that this task can be done?

Mr. STORM. There are problems, Senator, based on the perceptions of employees that do not appear to be adequately addressed by management. Some of them are dissatisfied with the conditions they are confronted with.

Senator LAUTENBERG. Senator Baucus?

Senator BAUCUS. I have no questions, Mr. Chairman.

Thank you.

Senator LAUTENBERG. Did you want to make an opening statement?

Senator BAUCUS. No, thank you. Thank you.

Senator LAUTENBERG. Thank you very much.

I thank you very much, gentlemen, for your appearance. As I said, we will keep the record open and would ask you to respond quickly to any questions that you might get in writing.

Thank you.

Senator LAUTENBERG. Mr. Robert Duprey; Mr. Patrick Robin; Mr. Stephen Wassersug, if you would, please, join us at the witness table. To repeat, as you heard before, it is customary practice that witnesses before oversight committees do provide sworn testimony. I would ask you to raise your right hands and ask, do you solemnly swear that the testimony that you are about to give before this subcommittee is the truth, the whole truth and nothing but the truth, so help you God?

Mr. TOBIN. I do.

Mr. DUPREY. I do.

Mr. WASSERSUG. I do.

Senator LAUTENBERG. Please take your seats. Welcome.

Before we hear from these witnesses, I would like to explain for the record the purpose of the testimony that we are about to hear. Work of oversight subcommittees tend to emphasize the negative, and that is understandable. The Congress tries to assess whether these programs that it created and funded are being properly administrated or whether they are being deficiently performed. It looks for flaws in policy; for me, in particular, for flaws in the management system.

Through the oversight process, the Congress formally points out the flaws, the problems out to an agency or a department. The panel before the subcommittee represents the opposite of the traditional oversight practice. These three witnesses, EPA hazardous waste managers, represent for themselves, their staffs, and the rest of the Environmental Protection Agency, not the flaws that were found, but the creativity, the thoughtfulness, the dedication in the implementation of Superfund.

I believe it is important that we in the Congress not lose sight of the fact that though we may, at times, disagree with EPA, it is generally staffed by capable people who are no less committed to the goals of environmental protection than we are. Perhaps through this process, we can share with the people of the country that we have a cadre of good people at EPA doing a job that is tough and complicated and very often, more often than not, controversial.

Steve Wassersug, who is from my State of New Jersey, I might add, he is Region III's Hazardous Waste Division Director. I understand you will be sharing with us, your work, and staff recruitment and retention. That is the topic we have just heard about from GAO and is of considerable importance to Superfund's future.

Pat Tobin, Region IV's Waste Management Division Director, and he has, along with the Regional Administrator, Jack Trevan, who you know, has been a leader of the demonstration of innovative and alternative technology on sites.

Despite administrative and other obstacles, Region IV understood SARA's push for new hazardous waste technology as it went out.

Robert Duprey, Region VIII's Waste Management Division Director, has a lot of experience to share with us on Federal facilities. Your region has become one of the largest and worst Federal offenders, and you and your staff have worked long and hard to get movement at places like Rocky Mountain Arsenal and Rocky

Mountain Flats and Rocky Flat and others. We are delighted to have you with us today.

Before we invite any testimony, I would, once again, ask Senator Baucus if he has a statement?

Senator **Baucus**. Not at this time. I have some questions later, but no statement. Thank you.

Senator **Lautenberg**. Thank you very much. We will start with you, Steve.

STATEMENT OF STEPHEN R. WASSERSUG, DIRECTOR, HAZARDOUS WASTE MANAGEMENT DIVISION, U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION III, PHILADELPHIA, PA

Mr. **Wassersug**. Mr. Chairman and members of the Committee, it is truly a pleasure for me to be here to explain the manpower efforts that we have undertaken in the Region III Philadelphia Regional Office and Mid-Atlantic States to deal with the Superfund sites. May I say I am responsible for activities that deal with RCRA, toxic substances and pesticides, as well.

I think it is clear that recruitment, training, retention and getting qualified personnel has been a major priority, not just in the last year for us, but in the last 4 or 5 years. We have really recognized this as an area we needed to work on, plan for and very carefully dedicate high-level management attention to this area.

We clearly have realized that Superfund requires the dedication of skilled staff to clean up some very difficult sites and deal with some very difficult areas, and we get into areas and, with my own experiences in other programs, from air and water in past years, of getting into areas of hiring very new, innovative type of people with unique qualifications and hydrologists, geotechnical engineers, specialty planners and other things.

Within the Region III office, I think one of the things that we dedicate ourselves to is, and that is throughout the office and working with EPA Headquarters, as well, is high-level management attention, and getting the Regional Administrator attention throughout the process and throughout our personnel system.

Without everyone on board, really, what we have done can't happen. We have developed, we believe, a strong, cohesive group of people in many of the new positions we have hired, and I would like to go over some of those areas and some of the progress that we have, in fact, made.

I would like to just hit points very quickly on recruitment, retention and training which I think are somewhat unique and which we have also shared with other regional offices.

They shared with us some of those points, so that we have a network, in a sense, to move and act quickly. First of all, when I mentioned about four years ago, you look at that significant skill mix issue as we started to get into the first sites, an issue of toxicologists to which regional offices did not have toxicologists, and now I believe we have about four and three are in Superfund and one in RCRA.

We have geotechnical engineers. We have hydrologists. These are engineers we did not have in the hazardous waste areas. We embarked upon a very difficult and complicated program.

We also needed to bring in not only skilled and trained people, but a category of trained people who could look at the future of EPA and divide that mix in terms of the skills we were looking for. My experience is people just don't walk in. People don't come in and say, "Gee, I want a job."

You have to go out and look for them, and there are many people who want to work in the governmental sector and in the EPA area. We have done a lot of national recruitment trips over the last few years, be it the University of Missouri or down at the University of Puerto Rico or whatever. We have done that and hired many of the hydrologists from not just the immediate areas, but from other parts of the country, and we have established a network and I think that is important.

The advertising we have done has been at the national forum, with national press and professional journals, and that has been helpful, at least getting the recognition out there.

Direct hire authority, which we sought from OPM, which each region must do, was one of the keys, particularly in the last year. So when you meet someone, it is not a 6-month process or 3 months to bring them on. We were able to offer them jobs on the spot or shortly thereafter after checking credentials, very key to bringing in engineers and scientists, something we haven't had, at least up until this month, when we were going through that high recruiting program, showing OPM what the employment level was and making the point that we were going through a massive recruiting effort.

Lateral transfers, many of our people have come from the Water Division, the Air Division and so forth. We need the multimedia skills, and frankly, I think we have some of the best managers who have come from many of the other divisions, as well, and have come from the regional office and makes up the management we have.

We undertook a job fair this February. We anticipated the resources we were going to get. We had basically set up a plan and started with a job fair; the first one, because we were looking at some very large recruitment numbers.

While we expected a few hundred to show up at our job fair in Philadelphia, we had somewhere between 1,100 and 1,200 and basically extended our hours, with all the managers coming in from early morning until late at night to interview all the people we could who came from Massachusetts to Texas.

Senator LAUTENBERG. A whole range of skills.

Mr. WASSERSUG. A whole range of skills and very outstanding skills. They came from Massachusetts amd Texas. They heard about it, and they wanted to be part of the EPA and the new EPA and the new Superfund movement.

We hired many of our people from States, including New Jersey, Pennsylvania, in and around the immediate area, as well as other States, as well as other Federal agencies. I think other things that have helped us is the dual career ladder, so that we do give higher grades to geologists, project managers and others.

We are working in a system that has a career ladder to reward those people to insure retention of those people. When we talk about special pay, there are sometimes personal negotiations on people who had competitive job offers on the outside, and we have managed to work with the salary schedules with them so that we matched some of those job offers in the step ranges or the salary grades when they came to work for EPA.

On the retention area, we have worked out many types of things. We built in an esprit de corps. We have many of our people who move from program to program with the idea to develop and work on their skills and bring skills to the Superfund program and move some of these skills to the RCRA program, as well.

We have done special culture studies and special retention studies to see what the issues are, as well as the strengths, and we have done those, as well, to see what areas we were weak, what we can improve, and we have got some recognition out of that in terms of weaknesses and the strengths we can deal with.

We have had a new reward recognition program, so while someone can receive a small award, a $100 check, a turnaround time in maybe hours or days, which is a very important incentive to keep people going. We have looked at wellness programs, stress management.

As I mentioned, rotational positions, other areas we have done. Mentor, we have a mentor program, and that has worked out extremely well. So all in all, in working with the people on their training plans, we don't just do next year's training plan; we look at the career plan for many of these people, as well. I think that I mentioned many areas in training which I can go over, as well, if you are interested, but I think the bottom line here is that we have some results.

We have moved, in 1983, from somewhere about 40 positions within the division regional office to somewhere around 212 on board now. On the government side, that is the very difficult challenge. It is a very important thing to recognize, and if you were to look at our hiring rates as of July 30 to get an analysis of where we are against all our new positions and in our division, anyways, we are in a 97.1 utilization rate.

We anticipated many of the work years that were needed; people have come on board; and many of these people that have come on board, in looking at them, have come from states, consultants and from other divisions. So we have, at least, I would say, 50 percent of those people are probably well experienced and can move right on to the ground floor of the program.

There are some down sides. If you would like, I would hit a few of those.

Senator LAUTENBERG. In short form, if you will.

Mr. WASSERSUG. Sure. The down side, of course, is that the higher salaries, of course, do attract some people on the outside. We have lost several, but not a large degree. Of those that we have lost, we have brought in far more from the consulting field, I believe, than we have lost to the consulting field.

In working with them and frankly, I think we are able to know who the better people are, working at the staff level in the consulting field to bring them in. Many of our OSCs and project officers and others have also come from the consultant field.

Grade compression is another factor. As all these grades and salaries get to be very tight, I think the compression issue is one.

Morale between Superfund and other people is one factor we have had to watch very carefully. Where I deal with many programs, it is an issue how to observe. Because of salaries, because of favors or whatever, we need to watch all the programs so we don't raid one at the expense of all the others. I think they are all important.

But I think what we have is a good team on board. I think the point is, from a management standpoint, our philosophy is never be fully satisfied with the past but plan for what has to come.

Thank you, sir.

Senator LAUTENBERG. Thanks very much, Mr. Wassersug.

Next, Mr. Duprey.

STATEMENT OF ROBERT L. DUPREY, DIRECTOR, WASTE MANAGEMENT DIVISION, U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VIII, DENVER, CO

Mr. DUPREY. Mr. Chairman, thank you very much for inviting me here to this hearing today. I am from EPA Region VIII, Director of the Hazardous Waste Management Division. I will be speaking briefly on our experience with Federal facilities. I might start by saying that working with Federal facilities is a very frustrating thing to do as another government agency working with a different Federal agency. It has been frustrating over the years.

Our situation today is a completely erosive one. We still have many problems to solve, but we feel we have been making a lot of progress, especially in the last couple of years. The problems are enormous at the facilities we are dealing with. At the Rocky Mountain Arsenal, alone, it is estimated that it will cost over $1 billion to completely clean up that facility. That is not a great deal less than the original size of the first 5-year Superfund.

In our region, we have 37 MPL sites; five of them are Federal facilities, and they are either the most complex or among the most complex sites in our region, so we have put special emphasis on them, because one of the criticisms we receive often is the Federal Government isn't doing its part to show leadership in cleaning up its hazardous waste problems.

We have the Rocky Mountain Arsenal and the Rocky Flats Nuclear Weapons Plant in Colorado; the other three are in Utah; Hill Air Force base; the Ogden Defense Site; and the Utah Army Depot.

One thing that we have done, I think, that has helped us make some progress is that we have used the Grade 13 Senior Project Officer classification for our senior project managers at two of these Federal facility sites, at the Rocky Mountain Arsenal and the Rocky Flats Nuclear Weapons Plant.

For private sites in our region, we have also used that classification for our other complicated sites, Lowrey landfill, and the Clarks Fork sites up in Montana, which involve a series of Superfund sites along the Clarks Fork River.

We have used the Grade 13 classification there recently and filled that position to help retain our more senior members and plus, reward them for the real complicated work that we have to do at those kinds of facilities.

Of the five Federal facility sites in our region, four of them have formal, three-party agreements between the EPA region and the states involved. These agreements all predate the SARA amendments, so we are going to be going to modify those agreements to incorporate the provisions of section 120 of the SARA amendments.

Our agreements do require EPA review and approval of work plans; the remedial investigations; the feasibility studies; and subsequent remedial actions. We feel that, having those agreements, in most cases, over a year before the SARA amendments has given us a leg-up on getting ahead with clean-up.

The Rocky Mountain Arsenal agreement is the oldest, and it was done in 1983. It is probably the most frustrating to us in terms of making progress at this site. More recently, due to the litigation that has been on-going involving Shell Oil Company and the State of Colorado, there have been on-going negotiations, and we have arrived at agreed interim measures to be implemented.

These interim measures are now taking place. Many of them have taken place over the last 2-year period. Currently, over $80 million have been committed and spent for clean-up work at the arsenal.

There are additional interim measures. There are a total of 15 additional measures that are taking place over the next 2-year period. These measures are to address contamination at over 100 different separate areas at the arsenal. What we are doing is to prioritize the various actions, and we are gradually going through the process of taking on each area and cleaning up that area and moving on to the next one. We started with the off-site contamination of the drinking water supply in Commerce City.

The Rocky Flats agreement is the other one I will mention; it was just signed a year ago in June, 1986. It covers the Resource Conservation amd Recovery Act, and Superfund. It was the first Department of Energy facility that granted jurisdiction over mixed waste to EPA and the State of Colorado.

I might say, on that, Dr. Porter of EPA headquarters and his staff gave us enormous support in getting that agreement. It involved very high-level negotiations with the Department of Energy here in Washington, as well as with the Attorney General and Governor's office in the State of Colorado.

That agreement is now resulting in some real progress. We have seen the first interim measure completed at the facility with the closing of their solar ponds, which was the main source of solvents contamination leaking into goundwater.

The others, Hill Air Force Base and Ogden Defense Depot, had signed agreements in February 1986, and we have remedial investigations are nearly completed for those two facilities. I think a key to having these agreements has been having strong support from our Washington office and supporting us with the other Federal agencies in Washington. The involvement of the state has been a key element, where EPA and the state got together in advance and had agreement on what standards and procedures are to be used; and also, the use of technical committees, so our project managers could work with Federal agencies on a technical basis to minimize the number of disputes that would go up to management.

Mr. **Duprey**. Regional interdisciplinary teams. Basically, we have worked with our Water Division, our Environmental Services

Division, and other elements of the region in drawing expertise to work on these big problems.

That has been a major factor in making progress. We are now in the process of working with our national office to develop interagency agreements which will meet the terms of the new SARA amendments where we hope we can continue to make progress. In the meantime, though, we are moving ahead with the interim clean-up measures.

Thank you.

Senator LAUTENBERG. Thank you very much, Mr. Duprey.

Mr. Tobin?

STATEMENT OF PATRICK TOBIN, DIRECTOR, WASTE MANAGEMENT DIVISION, U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION IV, ATLANTA, GA

Mr. TOBIN. Senator, before I begin, my boss, Regional Administrator, Jack Ravan, asked me to pass along his personal regards and express his appreciation for your continuing interest and personal involvement in major environmental activities. I know you and Jack worked together on various tough environmental issues in the past.

Today I would like to summarize four areas in Region IV involving alternate and innovative technologies. First of all, why Region IV wants to be very aggressive in this area; second, to summarize in general terms our activities; third, highlight some of our findings; and fourth, mention some of our future activities.

We feel we have to be very aggressive in this area, first in the Superfund amendments, where Congress has directed us to use permanent remedies, where practical. Also looking at the Resource Conservation Recovery Act; particularly the land ban requirements. Even though there is an exemption for some of the organic chemicals for 2 years, Dr. Porter wisely told us and advised us to comply with that land ban requirement now where possible.

Also, Dr. Porter has encouraged us to examine new technologies at NPL sites. As you look at new technologies they can be categorized into three different areas, one, alternative technology, second the innovative and the third is emerging. Alternative technologies are technologies which have a pretty good track record, however, you are trying to apply it to a new application, whether it be mobile or a field application, for example.

There is some risk in going that way. Innovative technologies, where they have been shown to work in pilot form, but generally do not have a long track record. You are taking a little higher risk in moving toward using innovative technologies.

The third category is evolving technologies. These are ones that theoretically work, however, or there is a high risk moving this technology into the field until more basic research is completed.

Summarizing some of our activities in Region IV on alternative technologies. We have looked at a small rotary-kiln incinerator, 1-ton per hour in mobile form, and used that at an MPL site in North Carolina. Through our RCRA program, we have been given a demonstration permit for a large rotary-kiln incinerator, 5 tons per hour, transportable, which will be applicable for use at Superfund sites.

It is being used to destroy dioxin contaminated soils at a site in Mississippi. Under innovative technologies, we have looked at an infrared high temperature destruction unit, 100 tons per day, at a waste oil site in Florida. We have also looked at a volume reduction unit, 100 tons per day, at a waste oil site in Georgia, and the new plasma-arc high-temperature technology.

We weren't able to match up this technology to a Superfund site, but through our TOSCA program and DOE facility in Tennessee, we were able to examine it there.

We have also involved EPA's new SITES program in our activties. They have come and reviewed our project using infrared destruction technology in Florida. They have taken samples and they are also lending their expertise. We have some common findings throughout our studies.

One, the materials handling we found is just as important as the technology itself. Getting the materials in a form to be placed into the unit, we found, was extremely important. Secondly, we found out that it is not necessary linear performance from a pilot unit to a full scale operation. I would like to say that just because a small yoyo works, doesn't mean a very big yoyo is going to work.

We are trying to encourage actual scaledown on some of these units. We don't feel that you have to have big machines all over the place and in Region IV it appears that smaller, high performance units would meet most of our Superfund needs.

The performance has varied upon the technology and the material being treated. Mainly, at most sites, for liquids and sludges, most units perform very well. For suspended soils and other soil materials, some units outperformed others. We have a general problem with heavy metals throughout our Superfund sites.

In practically every instance, testing has led to modified designs. We feel the second generation of these units should be better. What does the future hold? In Region IV, we are looking at the possibility of using the second generation of the infrared destruction unit to implement a remedy at a South Carolina site.

We are also looking at a second generation of the small rotary-kiln unit for a remedy at a Florida site. In addition, it is my understanding that the second generation of the volume reduction unit is being considered for Region V for a NPL site in Ohio.

In summary, we feel we are taking some risk by moving this technology forward. We will probably be criticized, because when whenever you are doing something new, you need to use some professional judgment. For example, how many new redesigns you are going to allow before you judge the units successful or unsuccessful. Whenever you do this, you risk being criticized.

I really feel the risk is worth it. In my opinion, our work is going to lead to better decisions on selection of remedies, and I feel the remedies will be able to move faster in the future because we will have these systems debugged.

Finally, on a personal note, I want to thank Mark Reiter from your staff for taking time out from his busy schedule to come down and meet with me and my folks. We really appreciate it. It narrows the communication gap between what Congress intends and how the people in the field are trying to implement the Congressional mandates. Thank you.

Senator LAUTENBERG. Thanks very much, Mr. Tobin.

I just wanted to review a couple of things that I heard each of you saying and, frankly, I was impressed by your testimony. Because it looks to me like what you have done as managers is attack the problem; trying to find ways of solving it that, perhaps, are not the routine; and coming up with a degree of success whether it's in terms of project management, recruiting, or technologies.

I respect and appreciate that. Yes, you do have to take a chance. Sure, you could get hell for it. But what we wanted to do is try as best we can to get a process started that gets these sites cleaned up.

Mr. Wassersug, if you have been so successful in recruiting, how come you are able to get them to come in, and then why are they going out so fast? Are you challenging GAO's report? The recruiting sounds like you are doing all right; job fairs, et cetera.

But then why are we so short of people?

Mr. WASSERSUG. I don't know that it's short. I'm not challenging the overall statistics, but in looking at those statistics, Senator, there is a lot of issues, perhaps, that can be reflected. It includes clerical, for example.

We do have some turnover in clerical in Superfund area. We do have people moving between divisions in rotationals. As they move out of Superfund and into RCRA it appears to be a loss to the program. We want people to move there, and it is not really a loss to the program, per se.

What I am trying to say is that when I really sat down and tried to look at the real numbers of highly-skilled people that we had, and that we actually lost, and perhaps came up with about two handfuls in the last 2 years. One, in fact, was a significant hydrogeologist who is about to come back to us who worked for a petrochemical or petroleum industry.

I think the point, though, is we have had some very highly skilled people come on board that we had 4 or 5 years ago that give us 2, 3, 4 excellent years. They trained many of our staff. They helped develop an esprit de corps.

Losing that handful or whatever I am not sure is such a bad thing. They also give a sense to the community outside what Region III wants; what its demands are; what the demands are for staffing and gives the field a better feel when they come in with what our requirements are. I don't feel that we have lost something that would indicate we can't get the job done.

Part of the recruitment was to anticipate some recruitment turnover, to get some people in there who would backfill very quickly into those skilled positions and develop some junior people who would stay over the longer run, as well.

Senator LAUTENBERG. Are you satisfied with the pace that the clean-ups that you have been assigned are getting done?

Mr. WASSERSUG. As I was saying earlier, I have worked in all the fields, in a sense, of EPA. The difficulty here is I have not seen such a very complex scientific process. It is not the process itself, but the science involved in cleaning up the site. My own experience in the last several years has been just some complex engineering and scientific and some other issues that are just sometimes unanticipated.

I think that we did have some setbacks, of course, during the transition between the passage of the law. That certainly was an issue. From time to time, we have had other setbacks in trying to really understand the complexity of any one site and then going back into restudying it because we just didn't have enough background and information when we first started out.

I think the learning curve has substantially improved. I think our ability to identify and get on to a site and—I want say—speed it up overwhelmingly, and at least get into the heart of some of the issues; at least I think we can do some more of that, as we continue to have experience in dealing with the overall area.

The other thing is, we are dealing with some, I think, a very complicated statute which has put on some additional demands, certainly between the transition, some of which has been mentioned by my peers here. You need to look at some of the innovative technology ideas, some of the permanent solution ideas, and those things don't come that easy, even with the staffing aboard. It takes some time to look through that. But I think we are trying to adjust.

Senator LAUTENBERG. The thing that perplexes me is that with all of the advance warning that we had and advance knowledge that we had that we might wind up with certainly a substantially larger Superfund program, certainly, something was going to make more demands of staff and organization, why is it that you are not at the staffing level that we ought to be?

I find it very interesting that you and your colleagues here are able to get some things done that don't seem to exist throughout the organization.

I would have to conclude that the senior operating management is much more aggressive about its task than the management of the agency or EPA altogether. We seem to be fighting a battle, constantly reviewing why it is that things have not happened.

We had a very testy hearing yesterday on air toxics and clean air act renewal. I find, at least it seems to me from what I have heard here now, is that those who are given the task of getting the job done find the innovative ways, do the recruiting, get on with it one way or the other. I don't want to say by hook or by crook. That is not a good way to do things.

But to get things done. My time is up, and I would ask my distinguished colleague if he has questions.

Senator WARNER. No, thank you.

Senator LAUTENBERG. Do you have an opening statement?

Senator WARNER. I will put it in the record.

[Senator Warner's statement follows:]

OPENING STATEMENT OF HON. JOHN W. WARNER, U.S. SENATOR FROM THE STATE OF VIRGINIA

Thank you, Mr. Chairman, for scheduling today's hearing. This hearing will hopefully give the subcommittee the ability to consider a number of management issues affecting EPA's implementation of the Superfund Porgram.

I would also like to thank the various panel members for taking the time to give us the benefit of their views, especially those that have traveled from EPA's regional offices.

Under the Superfund amendments and Reauthorization Act, EPA has been given and ambitious schedule of required cleanup actions that must be completed within strict timeframes. Meeting these requirements means that the Agency must develop and retain a highly skilled workforce.

Today the General Accounting Office will summarize the findings of an audit which indicates that EPA's Superfund workforce is experiencing higher than average turnover rates and is facing shortages in key skill categories.

I am interested in learning what can be done to innovatively address these problems in both individual regions and nationally, given the sometimes inflexible requirements of the Civil Service System.

Another key issue that needs to be addressed today concerns the length of time needed to fully complete cleanup actions in the program. I would like to know what steps can be taken to reduce this amount of time, which currently is running at between 6 and 10 years, and whether EPA can meet the schedule of cleanup actions in the Superfund Legislation if these timeframes are not reduced.

Finally, I am interested in learning more about the experiences of EPA's region VIII staff in dealing with the very real problem of compliance by Federal Facilities. I also hope to address this issue in more detail at subsequent hearings which I have requested.

Again, thank you, Mr. Chairman for pursuing these matters. I look forward to hearing from the various witnesses today.

Senator LAUTENBERG. Senator Baucus?

Senator BAUCUS. Thank you, Mr. Chairman. I first want to commend EPA, particularly Mr. Duprey, for initiating a coordinated approach to do the Clark Fork clean-up program. I would just like to ask how is it coming along and what is working; what problems you are running up against and what we can do to help you move it along?

Mr. DUPREY. Yes, the Clark Fork sites are four Superfund sites along the Clark Fork river but it covers a distance, as you know, of 125 miles from Butte to Milltown, which is a large area. It includes, we have identified 77 separate contamination source areas along that Clark Fork segment.

I think what is going good right now is we just concluded an agreement with Arco Coal Company, who owns Anaconda Minerals Company and with the State of Montana to meet regularly and to develop, as our initial step, our priority for clean-up of those 77 operable units. We hope very soon that we will start doing some real clean-up on the Clark Fork.

I think the big frustration, so far, is we have had quite a few studies, but not very much actually taking place.

Senator BAUCUS. When do you think you will get it cleaned up, and where?

Mr. DUPREY. We will start with the flue duct clean-up in Smelter Hill late this summer. We have a project with Anaconda Minerals Company to demonstrate a technique to remove the arsenic from flue dust and use that to clean up the 350,000 tons of flue dust that are on the Smelter Hill.

In Butte, we have a project at Walkerville that we expect to start late in the summer using the removal authorities of Superfund.

Senator BAUCUS. What about toward Milltown, down the river?

Mr. DUPREY. Yes. The studies down river haven't been completed except at Milltown itself. At Milltown, we have installed a public water system for the residents in that area and evaluating the clean-up of the Milltown reservoir.

Senator BAUCUS. That is working pretty well, isn't it?

Mr. DUPREY. Yes.

Senator Baucus. Those folks appreciate that. But there is a deep feeling further up river that there has been enough studies and it is time to get moving. Is that a view you share or not?

Mr. Duprey. Yes, I do. I think we have to make greater use of our removal authorities to do interim clean-ups prior to completion of remedial investigations.

Senator Baucus. Is there anything impeding you with the actual removal that the Congress can help you with?

Mr. Duprey. I think the new Superfund amendments give us the authority to do that, to do just that. We are starting to do it. The increase in the funding authority for removal actions up to $2 million, and the extension of the time frame up to one year gives us the authorities we need to move ahead.

Senator Baucus. Do you have a timetable by which you expect to have certain portions completed and then finally, all of the Clark Fork work completed, any dates?

Mr. Duprey. We have dates on some of the actions. As I mentioned, the agreement with the Arco Coal Company will set dates and priorities for the rest of the operable units, which is lacking right now. That comprehensive plan is what we need to give you that information.

Senator Baucus. What is the company's attitude? Are they a bit stubborn and dragging their feet, from your point of view?

Mr. Duprey. From my point of view, I have seen a real change in attitude by the Arco Coal Company. They really do want to get on with the clean-up effort. I think they are tired of the study, as well.

Senator Baucus. I strongly encourage you to do all you can to keep moving very quickly, because they are reaching a critical point there of frustration, and there is going to be a backlash and it is going to be a problem if you don't get moving.

Thank you.

Thank you, Mr. Chairman.

Senator Lautenberg. Thank you, Senator Baucus.

Senator Warner?

Senator Warner. Thank you, Mr. Chairman. Mr. Chairman, you and I were just discussing the private versus the Federal role here. Perhaps just a leadoff question and then we will get into the Rocky Mountain arsenal. I also serve on the Armed Services Committee, and to the best of my recollection, we put very little focus on this. This will give me an opportunity to learn some more.

Does the agency have in place written guidance outlining the time frames under which negotiations with other Federal agencies are to be conducted?

Mr. Duprey. There is certainly guidance. Outlining time frames to the regions on conduct of negotiated settlements and agreements.

Senator Warner. Does it differ from what you apply to the private sector?

Mr. Duprey. No. My understanding would be essentially the same.

Senator Warner. Could you expand a little bit on the arsenal problem? What is the status of that particular case?

Mr. Duprey. Yes. It is a case——

Senator **Warner**. You need not go back over what you said already; just whatever supplementary views you have.

Mr. **Duprey**. The Rocky Mountain Arsenal is a case in litigation where the Federal Government has sued the Shell Oil Company for $1.8 billion and natural resource damages, and the State of Colorado has sued both the Shell Oil Company and the Federal Government for a similar amount.

Basically, the arsenal is the location, as you know, of nerve gas production for the country starting in World War II, 1942, through 1970, when production was ceased at the arsenal. It is an area of 27 square miles. It includes over 100 separate areas of contamination, and it is estimated that clean-up will cost, likely, more than $1 billion, although cost estimates have varied from $350 million up to $3 billion.

Basically, where we are now is the Army, U.S. Army, is the lead agency on implementing Superfund at that site. Our role has been to negotiate the agreement, first of all, to set in place the schedules for remedial investigations and for interim clean-up actions at the site and to work with the State of Colorado, as well, as part of their efforts in clean-up of that site.

Senator **Warner**. Are you satisfied with the pace and the attitude that the Army is taking?

Mr. **Duprey**. I wasn't satisfied until recently. We have seen a major change in the Army. They put in place a program manager office, which has 30 people in it, to manage the clean-up of this site, as well as major contract support to them, and they are committed to clean up this site and not simply to contain the waste.

At one point, back a few years ago, the strategy was to build these retaining walls at the boundary and keep it from going off site. That didn't work, by the way. It got off site, anyway, and got into public drinking water supplies.

Senator **Warner**. The groundwater problem.

Mr. **Duprey**. The groundwater problem, so basically, now their approach is to go in to clean up the sources of contamination and decontaminate the arsenal. I think they are making major progress. The difficulty, as I mentioned earlier, is that it is a huge program, a $1 billion program.

It is close to the original size of the entire Superfund, and they have outlined a clean-up program that goes through the year 2000. They did present to the Congress an alternative plan which would do the job by, I think it was, 1994. But the costs would go up quite a lot more if they used the earlier schedule.

There is quite a bit on the record in terms of the detail of the clean-up program at the arsenal that I could send to you.

Senator **Warner**. Are there monies being appropriated to meet the timetable?

Mr. **Duprey**. Yes. They have been getting the funding. My understanding, the funding they have been requesting, they have been receiving.

Senator **Warner**. I thank the chair. Might I insert for the record further questions?

Senator **Lautenberg**. Absolutely. The record will remain open.

I have just a couple of quick questions, and then we will call the other panel.

Do any of you have projects that are ready to go in this fiscal year which you hadn't anticipated earlier and for which funding was not planned, projects that have suddenly emerged as ones that need fairly quick attention or fairly aggressive attention?

Mr. Tobin. I think we are okay in Region IV.

Senator Lautenberg. Do any of you have projects which were under budgeted that might curtail your ability to move the projects, those that are on the agenda or to move them at a pace quick enough to get on with the task of site removal?

Mr. Duprey. Yes. One of the problems we have is in starting new projects, the starting of projects on sites that aren't yet in a plan for clean-up.

The other area, we have had one project where our estimate of the cost of clean-up has been increased at one site, and we are lacking, we are basically funding part of the work now and finishing it with funding from, we are finishing it with funding from 1988.

Senator Lautenberg. Do you see a budget issue in terms of your getting your tasks on and going?

Mr. Wassersug. If I could follow up with what Mr. Duprey has said, I think that that is of concern, of course, starting of projects, as such, but I think down the road, I think as you start them, we also have to interface with States, and the States staffing issue may be a bottleneck in terms of whether we can do the quality and how many we are able to take on at any point in time.

We have to really look at that to make any kind of answer. Those in the system, where we have plans for construction or whatever, as I understand it, we are, in our region, at least, set for this year. But the starts is the potential issue.

Senator Lautenberg. You have been very candid, and we are not looking to create a problem within the agency.

Is it fair to say that you have gotten all of the dollars committed that you require for the sites that are under consideration for removal at this point? I am talking about within a reasonable schedule; I am not talking about something that is much lower on the priority list, but about those that are among the most urgent.

Mr. Duprey. Yes. My understanding is the budget is tight on removals, and what we have done on some projects is submit the project so we get started with the work and fund the work we need to do now and complete it with funds from 1988, and we have been able to move ahead on that basis.

There is a bit of uncertainty, and that is, whenever you are counting on a future year to do the work, we can't guarantee, of course, to the public that we are going to finish that project.

Senator Lautenberg. But you don't have the staffing levels necessary, and I recognize each of the regions might be different, because some place along the way, either GAO was right when they said there were too few people and too many jobs, or you three are exceptional, and we know that to start with; your regions are so well managed, at least in the parts over which you have jurisdiction, but everybody else has a problem?

Mr. Wassersug. No. I mean, I think that would be difficult, to be honest. Certainly, I think we all look at this every day. There have been times when we have had more removal projects all of a sudden, potential, come in in a week and all our staff and on-scene coordinators have been assigned to sites at any one time. That hasn't happened all the time, but that may be an indication in one sense that if there was another on-scene coordinator, but we have, as far as we feel, a priority system and any of those in risk, any of those on the national priority list clearly, get the first attention from a removal standpoint.

We want to make sure that those sites are stabilized, and while there is a long period of time in the ultimate clean-up of a site, we think that we have done a fairly good job, at least, in the initial clean-up areas, particularly in the removal and stabilizing side.

As my counterparts have said, the new statute gives us the very significant remedies that we really appreciate. While it is complex, it also has made parts of life easier, as well.

Senator LAUTENBERG. Are you at the starts level that you ought to be?

Mr. DUPREY. On new starts?

Senator LAUTENBERG. New starts.

Mr. TOBIN. In Region IV, we would like to do more new starts.

Senator LAUTENBERG. You would like to do more. I assume each one of you would?

Mr. DUPREY. Yes. I have some sites in Montana where there is a lot of interest in moving ahead because they have been on the list for a couple of years.

Senator LAUTENBERG. You know, New Jersey has a fair interest.

Mr. WASSERSUG. Yes.

Senator LAUTENBERG. We have an abundance of sites, unfortunately, based on the industrial history of our state.

Have any of you used or had experience using preremedial phase contractors to do some of the data collection, site characterization work that might shorten the time frames?

Mr. DUPREY. I just completed one in Brookhurst, Wyoming. It is not a listed site, but we use what is called an expanded site investigation. We put in 28 monitoring wells and did air quality work inside homes and outside, as well, and evaluated soil contamination. It took us about four months to do.

We hope, on that one, that we will have the remedial investigation started before its proposed for listing using PRPs to do the work.

Senator LAUTENBERG. Have either of you used preremedial authority?

Mr. TOBIN. Yes, we have.

Mr. WASSERSUG. I believe we have, also.

Senator LAUTENBERG. And the experience has been a good one. Why, then, aren't we using more of this approach throughout the country? Do you know?

Mr. DUPREY. Part of it is that where we are in the process, I think. We already have quite a few sites that are listed that we need to get done. I think for these new ones coming along, they can do quite a bit with the new preremedial part of the program to change the way we have been doing business and do it much quicker.

Senator LAUTENBERG. Yes. Thank you very much. We will now call the third panel.

I need to leave for a few minutes. Senator Warner will preside.

I would remind you that the oath is required in oversight testimony.

Senator **Warner** (presiding). If you gentlemen will kindly raise your right arms, please? Do you solemnly swear that the testimony that you will give before this subcommittee is the truth, the whole truth, and nothing but the truth, so help you God?

Dr. **Porter**. I do.

Mr. **Kinghorn**. I do.

Mr. **Longest**. I do.

Mr. **Lucero**. I do.

Senator **Warner**. I have the statement of Mr. J. Winston Porter. Mr. Porter, I will address you in terms of addressing all. I would suggest that perhaps you submit this in its entirety for the the record and that you detail those highlights you think are important to articulate this morning.

STATEMENT OF DR. J. WINSTON PORTER, ASSISTANT ADMINISTRATOR FOR SOLID WASTE AND EMERGENCY RESPONSE, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY C. MORGAN KINGHORN, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF ADMINISTRATION AND RESOURCES MANAGEMENT; HENRY L. LONGEST II, DIRECTOR, OFFICE OF EMERGENCY AND REMEDIAL RESPONSE (SUPERFUND); AND GENE A. LUCERO, DIRECTOR, OFFICE OF WASTE PROGRAMS ENFORCEMENT

Dr. **Porter**. Thank you very much, Senator Warner. I am pleased to be here, and I will try to keep this brief, as I know time is running along. I have with me today on my immediate right, Morgan Kinghorn, Assistant Administrator for Administration and Resources Management at EPA; on my far right, Mr. Henry Longest, Director of Superfund; on my right is Gene Lucero, who is Director of Waste Programs Enforcement.

What I want to do today is just briefly summarize where I think the program stands and some areas for attention and improvement.

First off, with respect to status, I want to kind of——

Senator **Warner**. Let me interrupt just a minute. There is your statement, are there others?

Dr. **Porter**. No.

Senator **Warner**. That is all. Fine. Your statement will be admitted to the record in its entirety, and we will now receive your direct testimony.

Dr. **Porter**. All right. On the program status, I want to talk briefly about the emergency removal part of the program and about the longer-term remedial actions which we undertake. First off, with the removal program, where we fairly directly try to go out and solve a problem, I think it has been very successful.

Actually, this week or early next week, we will start our one-thousandth removal in the Superfund program. That program, I think, has operated well. What we want to try to do is expand it. The new Superfund gives us authority to do long-term removal and spend more money directly on the site.

On the remedial side, I don't think the story is quite as good. The process for remedial work is as follows. First of all, we do a so-called preliminary assessment. We have 26,000 sites in our inventory.

We then score that site using the Superfund hazardous ranking system. Based on that score, the site may then be put on the National Priorities List. From there, we do a remedial investigation/feasibility study, then we prepare a Record of Decision with respect to the remedy, and finally, we enter into remedial design and remedial construction. So it is a fairly long process.

We have done about 22,000 preliminary assessments and about 7,000 site inspections. There are about 375 remedial investigation/feasibility studies ongoing at NPL sites.

There are currently about 100 remedial designs—that is, detailed engineering requirements, and about 60 remedial action underway at NPL sites. This is clearly a large, complex program.

I might say at the outset, we do expect to meet the majority of the statutory deadlines with respect to starts. That is RI/FS starts and remedial action starts. I want to emphasize, though, that we are not at all satisfied with just meeting that. Those, in fact, are starts.

Lee Thomas and I are particularly interested in finishes. That is where I think, frankly, we have, as has been discussed this morning, certainly some room for improvement. Let me just be honest about some of these areas and then talk about what we are doing to try to solve them.

The process is a complex process. My personal feeling is there is too much matrix management involved and not enough accountability. We will be moving rather quickly toward a project management approache as used by private industry and other public Agencies. With this approach where we have a firm and a person on our staff actually in charge of the project, managing it from soup to nuts. This means the firm would do the study, would do the design engineering and serve as the Construction Manager.

Right now we have, frankly, a lot of pass-offs in the system among four and five different contractors, as well as, the Corps of Engineers. That is one of the fundamental concepts I am moving to as fast as I can, to have accountability and responsibility in the program.

I also want to be more proactive in the sense of putting spotlights on projects. I have sent two memos out last quarter and this quarter, one dated May 8, one dated July 17. In these I am putting a spotlight on projects in which we need to make a decision with respect to the remedy, or a decision with respect to a settlement with responsible parties, and letting everybody know that we really need to make those decisions this quarter.

This is a tough program in which to make decisions in. You don't get a lot of credit for them. People have attitudes about them. Lee and I are both trying to push hard on ourselves and the regions to make these decisions.

One specific thing we are doing is trying also to bring more competition to the program. One of the things we have got in this country, in my judgment, is a very large, well-developed private engineering fraternity that is not very busy right now. We have a lot of people that work in this program, a lot of firms.

So we are going to be letting more contracts in order to get more competition in the program. EPA Regions III, in Philadelphia, and V, in Chicago, are in a procurement mode right now to obtain about ten more firms who can do this project management and engineering services work. I might say, by the way, that we have received over 80 proposals, good proposals, for these services.

There is, in my judgment, no shortage of people that want to work in this program. So we hope by next year to have a number of other contractors in place so that what we can do is develop contracts and select firms on much more of a site-specific basis. Frankly, if you do a good job on a given project, you get more work. If you don't do a good job, you get less work.

It sounds simple, but we intend to use that approach. We also currently use a relatively small number of contractors to do a huge amount of work. We are trying to get away from that.

With respect to emergency response contracts, as I mentioned, I think that program has done pretty well. We have discussed that in prior hearings, and we are trying to get more competition in these also, and I want to elaborate on that.

Another key point in the program is that we want to maximize the amount of work that private parties do directly. It is not at all clear to me why I need to show an Allied Chemical or Monsanto or a firm of that ilk how to do the project. They do that all the time. What I am really trying to do, with Mr. Longest's help here, is get the aggressive parties to do the projects they can. We think that will speed the pace of the program and will, frankly, save the Superfund for those sites where we don't find available parties.

Another thing we are doing is setting deadlines for settlement discussions. These are going on for entirely too long. We are going to be telling people that it is important to reach a decision on these settlement negotiations. We are now setting in motion a series of deadlines with settlement discussions so people know that on project x, the settlement discussion should not go beyond a fixed date without either the regional administrator's Okay or my Okay.

We also will try to make use of the concepts that SARA has provided to us, such as mixed funding, where we can fund part of the project, and responsible parties can fund part of it. This is the de minimus concept, where we can identify very small contributors to the situation without dragging out all the legal and other costs that result when these projects go on for a long time.

Human resources management I am not going to touch on. You have heard a lot about that matter, and we are ready to respond to your questions. It is a very important issue. Like you, Mr. Chairman, I spent time in the private sector. People are working very, very hard on these projects. There is a burn-out factor, in my judgment, where people are having to work very hard, and we have some of that to contend with.

One specific thing I have done, and I think it is going to be helpful, is to try to increase the level of pay for project managers. What I discovered when I got into the government is that we weren't considering a project manager a supervisor. I was saying "Well, if a person is running a $50 million project and handling the Corps of

Engineers and a few other things, why isn't that a supervisory job?" We changed that such that those people can now be called supervisors and we can get higher grade levels.

There is a lot of competition for good people. I might echo what Steve Wassersug said, though: That I don't consider it a total failure for us to have a person leave after a number of years. That percent may then go into a consulting firm that does work for us, and we still get that expertise. I need a lot of people out there on both sides of the fence that know public works.

Let me just say, in summary, Mr. Chairman, that I think we have made real progress. We have got room for plenty of improvement. I am not satisfied with the clean-up. It should not take 5 or 6 years to do these, in my judgment. We need to do a number of things. We need to delegate more authority to the regions. I was intrigued with your comments about resources to the regions, and I would agree with that.

What Lee and I have been pushing in the budget process is to get the work out to the regions where people can make these day-to-day, case-by-case decisions, and also to the states. As I said, I want to be sure someone is in charge of the project. I want to demand performance of our contractors, and I want to increase competition.

Finally, as I said earlier, I want to increase greatly the work that is responsible to you directly. Mr. Chairman, that is where we stand, and we would be happy to answer your questions.

Senator LAUTENBERG. Thanks very much, Dr. Porter. It is always good to see you here.

I have found you to be, in the past, forthright, direct, though we disagree at times on pace or programming. Nevertheless, I regard you as a highly skilled professional who has the core of your views, the integrity of the department and the integrity of the system itself. I respect that greatly.

I do see things differently. We saw GAO's statements. By the way, let me say that for all of you at the table, what I said about Win Porter, I feel, is true about the people at EPA, including Lee Thomas, with whom I frequently disagree. Again, that is the process. He disagrees with me, too, by the way.

But there is respect and, frankly, admiration that goes throughout the relationship. And so it shall be. That is not going to take any heat off EPA, as far as I am concerned, or movement off the projects.

Senator WARNER. Mr. Chairman, may I interject and associate myself with your remarks. In my office, and I have been here 8 years now, as our young people move on into other areas, EPA is always the first choice on their list. Fortunately, one of your assistant administrators was in my office for many years. So there is an environment over at EPA that is very attractive to the professionals that worked here in the Senate.

Dr. PORTER. Thank you, Senator Warner.

Senator LAUTENBERG. Senator Warner, the one thing that concerns me is that I hope it is not so attractive that it is a springboard out of government and into the private sector. That is one of the things that we see happening. The GAO suggested that, in fact, it is a wonderful training ground for other opportunity. It has always been my belief that an employee is doing their best job, whether it is government or corporate, when the people who staff the organization are desirable to other employers.

However, do we or do we not have a serious shortage of staff? Are the turnover statistics that we saw real or imagined? Does EPA, in general, and Superfund, in particular, exceed the average turnover rate for other departments of government, as was shown on the chart? If so, why so?

Dr. **PORTER**. Mr. Chairman, let me just react, briefly, and then I would like to have Morgan Kinghorn address the subject more specifically. We certainly do have somewhat of a turnover problem. These people are highly-skilled, highly-trained and in demand.

On the other hand, as Senator Warner indicated, people seem to want to work in the program. We don't want a revolving door. I think it is probably going to be the situation that we are going to have to fight hard to retain our people.

As I said, on the other hand, I am not totally concerned if they do leave. Unlike our other parts of the government, it is not totally inappropriate, I think, if they pop up in a technical job working for a consulting firm. We have to be careful how they represent themselves, but I do need, whether they are working for us or the states or the responsible parties directly, consulting people who know this program. It is very complex.

I will say this from a programmatic standpoint, the numbers of people and the quality of the people are not a major impediment to what I want to do. It is an issue, but I think there are other issues.

I said in my testimony, such issues as how we do the work, how we achieve efficiency, how we make these tough decisions are important. There are factors that are more limiting than sheet numbers at people. This doesn't mean, however, that I am not interested in those startling questions.

Senator **LAUTENBERG**. We have examined some of the other issues at other times, and we continue to develop information in those areas. The focus today is the manpower question, because I have a very serious difference with the senior management at EPA about what was done to get us ramped up, again, to use the expression.

It is almost a year since SARA was signed into law. We were working constantly at interim levels of funding to hold the organization together. The feeling was that it would take so long to get these skills back in the organization if we lose them. Well, have we got them or haven't we got them?

What I see is that we don't have them. Was 775 a dreamed-up number? Was that a number you subscribed to in terms of your manpower planning?

Mr. **KINGHORN**. Mr. Chairman, if I may, I would like to put a little of this in perspective. I want to look at a little bit of the growth rate of the Superfund. From 1984 and 1985 to 1986 and 1987 along with our planned budget in 1988, the work in this program has had an average yearly growth of about 32 percent. Some years were a little higher, some years a little lower, but the average growth was 32 percent.

With an average growth next year, our ceiling if Congress appropriates it, will be 2½ times the level permitted roughly 2 years ago.

Senator **Lautenberg**. Two years ago, you were out of business, Mr. Kinghorn.

Mr. **Kinghorn**. I am referring to 1985. In 1985, we had a work year ceiling of about 1357 work years. We used 99.9 percent of that ceiling, all but seven people. We then entered 1986, a year in which we had no authorization and we had a slowdown, in effect, for a year and a half.

In addition, we had an increase in 1986 of nearly 500 people, and additional growth in 1987, required another 600. The year before the shutdown, we had used nearly everybody we had to use. During the shutdown, we had freezes on; there was an RIF; and indeed, I think the attrition rate was 12 percent. You can count attrition a million ways. You know that.

I don't think we disagree with the GAO numbers for 1986 when they did their study. GAO approached 12 percent. And as you know, it wasn't until the beginning of FY 1987 that we received authorizations. The allowances, the final OMB approval and the Hill appropriation were not completed until January.

Our guess is that, in this fiscal year, we will probably use about 90 percent of the 2416 work years authorized. In effect, we will have a lapse, based on current trends of around 200 people out of a ceiling of 2,416. I do not think that is a particularly outrageous number given where we were and where we are in trying to ramp up the program.

Finally, I am not aware of any other agency that has had this kind of growth resulting from congressional appropriations and Administration requests. We did use 100 percent of the authorized work years in 1985, and I think we will use about 90 percent this year.

As we enter next year, we will have 2,200 to 2,300 people on board, roughly 200 work years below our new ceiling. I think we are tackling the question of hiring. You have heard some success stories in some of the regions. Some regions are up to full ceiling; some of the other regions that are in very competitive markets for engineers and chemists, such as Region V where we also have our largest program. As a result, we are not as well off in terms of our hiring, which is one of the questions you raised today.

The other is retention, which I am sure we will get into. In terms of hiring, I strongly believe that we have done a variety of things, both in headquarters and in the regions, and at the end of this year will be fairly close to our ceiling. Given the fact we are coming off nearly 16 months of no hiring in this program, I think that is a very good program, though not as good as we wanted.

On attrition, I will only mention one word. The attrition rates for 1987 have dropped back down to around 6 percent, where they were in 1985, and that was when we used 100 percent of our work year force. In general terms, I think our hiring is going very well. Attrition is getting back to where it was 3 years ago, which permitted us to fully use our work years. That doesn't mean we shouldn't be looking for ways to retain more people—the best people, I can get into that later, if you wish, and I will be glad to.

In raw numbers the 12 percent GAO talked about in 1986 is accurate. That was our most difficult year in this program. I don't think those numbers are representative of where we are now and of where we are headed.

Senator LAUTENBERG. I would pursue that. I am obliged now to turn it over to my colleague, Senator Warner.

Senator WARNER. Thank you, Mr. Chairman.

Dr. Porter, are you satisfied with the attitude and timeliness with which the other agencies and departments of the Federal Government who have programs in your area are participating in this program?

Dr. PORTER. Senator Warner, I am happier than I was a few months ago. I think for example, we just got a very good sort of milestone agreement in the national lab under RCRA, where we basically got all of the key points we wanted. We have Quincy Army Ammunition plant out in Minnesota, we are very close to agreement on that under the Superfund program.

A previous panel mentioned Rocky Mountain Arsenal, Rocky Flats. I think we have had made real progress. I think we have worked through most of the fundamental sort of legal issues in terms of the enforcement powers who makes the final decision of remedy and so forth. I would say yes, we have a lot of work in front of us, but I think we have cleared away most of the legal underbrush.

Senator WARNER. Do you see any legislative requirements in this area that would make it a more efficient process?

Dr. PORTER. I don't think we need anything very badly right now. We have had a lot of dialogue with the other oversight committees, particularly Senator Glenn's, more than on the House side. My sense is, we are in fairly good shape now. What I want to do is work very hard with the authorities we have.

Senator WARNER. Regarding enforcement against Federal facilities, what is the current position of DOJ concerning EPA's ability to bring a lawsuit against another Federal agency?

Dr. PORTER. They are saying we shouldn't do that as a general matter, not just EPA. They are saying we could enter into consent orders which are enforceable by citizens of the states. They are saying we could issue certain kinds of orders, such as the 106 order under Superfund, or the 338(h) action program as a permitting process under RCRA, but that is sort of where it ends.

Senator WARNER. I presume if you had this ability, would it increase your leverage?

Dr. PORTER. I guess it would, Senator. On the other hand, there is a lot of dialogue on both sides of this issue. The thing that a private party has and the Federal Government doesn't, is the ability to work both ways. We sue a private party. They can go into court and ask a judge to review that and enjoin it. The Federal Government can't do that. The Department of Justice said that we have sort of developed some dispute resolution processes which require time for things, frankly, to get up to the top.

Senator WARNER. This is somewhat of an academic question because it is not going to happen?

Dr. PORTER. That is correct.

Senator WARNER. It seems to me it goes up to the President and his National Security Advisers and others who coordinate the interagency process. I would think that you might wish to come to the Congress, in view of your successors in office, as a final court of appeals for a system that doesn't work.

I thank the panel; I thank the chair; and I appreciate the opportunity to participate this morning.

Senator LAUTENBERG. Thank you, Senator Warner. We have been joined by Senator Pressler. Senator, glad to see you here. We had quite a bit of testimony, a lot of questions. I am sure that you will be examining the record.

Is there anything that you would like to state for the record?

Senator PRESSLER. Mr. Chairman, I'm sorry that I'm late but I have been trying to keep up with my various committee hearings this morning. I am a member of 5 committees and 13 subcommittees. I am spread pretty thin.

Senator LAUTENBERG. We appreciate your being here this morning.

Senator LAUTENBERG. Let me get back to the questions that we were raising before. Mr. Kinghorn, you prepare regular reports about staffing; is it your particular department that does that?

Mr. KINGHORN. Yes, we provide summaries of utilization.

Senator LAUTENBERG. How often do you prepare those?

Mr. KINGHORN. Generally, we provide them, on a weekly basis, but we also do it monthly.

Senator LAUTENBERG. Could we be included in the distribution lists of that?

Mr. KINGHORN. Sure, no problem.

Senator LAUTENBERG. That would be helpful. You take some comfort that you have matched the staffing years of 1985 with 6 percent turnover that year; is that correct? I think it is a rather delicate kind of comparison to say the least, because that was the year when it looked like the ship was going down.

That was not the year that we were launching the new carrier. It wasn't the year that there was money with which to pay people. It wasn't the year in which one could say, "Hey, listen, I frankly now believe that the government sees Superfund as a long-term thing."

I think it is fair to say that whether I am here or others who are so interested in the environment are here 5 years hence, Superfund is on the books forever, I think, or at least as long as we can reasonably count, until much of that work is done.

The American people want it, are willing to pay for it. The Congress wants it. You folks want it. So we are here, and therefore, the inducement to come aboard and stay aboard, to me, is quite different. So I don't think that that is an appropriate comparison. The thing that I am concerned about is the targets, the goals. You said you would be short roughly 10 percent, and that is not bad, and honestly, I don't want to minimize any of the effort or the position that you have taken.

I think there has been a lot of good, hard, concrete work that has been done and has gone into this. But 10 percent in an expanding environment is, I think, woefully short of having the resources needed to take on these enormous tasks that the Congress and the President has given you. I assume the President has given it to you, I get a feeling that OMB is lurking in the background somewhere and saying, "We heard what the Congress said; we see what the President signed," but down deep someone saying, "We are not going to let them have all this booty." I think that it has permeated EPA's view.

Yesterday, Lee was challenged and took some offense to the fact whether or not he was simply carrying the message or whether he was doing what he believed to be right. He responded aggresively and appropriately that what he did, he felt, was right. I believe that.

None of us are so objective that we honestly say that what we do is right, free of other considerations, that we in our own sphere have to include in the equation. I don't think you would, either. I am disappointed to tell you that I probably can't, either. Here we are, 10 percent short on a program that is under way. Do you see us making up that shortage?

Have we got enough people on board today, full-time equivalents of EPA, to do the job that is optimally required?

Dr. PORTER. Mr. Chairman, could I respond to that? We want to hire all those people. Lee Thomas has been very clear, and it is a very high priority that we want to hire up to those ceilings. We will make every effort to do that. As I said, we have a competitive market, and there are other issues.

We are going to try to do that. I must say in my day-to-day working on these 535 projects, I have bigger problems than staffing. We are talking about remedy selection and others. I am not saying it is not important. I am working hard on that, and I am working hard on the other initiatives we are talking about.

I will say, while I am under oath here, that it is not my biggest problem. It is not trivial. I am interested in it. I want to get up to that ceiling, but I am much more interested in other issues right now as far as moving the process.

Senator LAUTENBERG. If I were to permit us to get off into the other area and discuss what the other problems are, I am afraid that we will be having a review of the law as it was designed and whether or not Congress laid down conditions that are too stringent, et cetera. That is past history. It doesn't do us any good.

You have an assignment, and I am sure you are up to the task of doing the best you possibly can to meet the goals and the standards that were set for you by law. The discussion becomes academic.

Right now, what we are focusing on is: Do you at EPA have enough people employed in the Superfund program to get this job done? When I hear that our turnover rate compares to 1985, I would have to tell you that says to me that that is the benchmark you are using, you are using the wrong benchmark. If the turnover exceeds government turnover generally, then something is wrong, because based on what Senator Warner said, I hear the same thing; EPA is the place where there is excitement, where there is challenge, where there is opportunity.

Then with a newly financed program, why is it that we can't get up to the staff level that we have to?

Mr. KINGHORN. Mr. Chairman, there are two pieces to that magic number of the authorized level. One, obviously, is keeping people whom we have, and I would like to get into that for a minute. The other is the hiring. And again, it's a function of how many you bring in and how many you lose. Obviously, in 1986, we were not bringing in a great number of people. There was a freeze generally except in significant places, in terms of senior management.

I really do believe we have solved most of the problems of getting people in here through a lot of the mechanisms the regions mentioned.

The key focus, I think, is one you and the GAO identified and that is retention. That is the other part of the mathematics. I think retaining our people, whether we have 6 percent or 12 percent, sometimes is not an issue of percentage. Sometimes it is your best managers, that is the key question. That is what I think you addressed, and I think you addressed it properly.

We have done a lot of things. Two of them are dual career and direct hires. Many of our problems are similar to other areas. Accountants, for instance, are extremely difficult to get in this program. Their pay gap based on these studies is about the same as engineers and scientists, 33 and 34 percent at the GS-5 level, if you can believe that.

OPM released the directive for accountants for everyone in the country with direct hire authority. Things like that are happening. I think what you are seeing this morning is a focus, and we appreciate your help on the attention, but the focus is on holding the best people we have through career development.

For example, in the Niagara area of New York; there is a project manager up there with, in effect, no personal supervisory experience and no responsibility, but managing one of the biggest and one of the most complicated projects in the Superfund. That person is a 15. That is one of the initiatives you heard this morning.

We are giving more attention to this. We have a lot of tension in the agency about integrity and employees being drawn outside. I think the key problem now and for the next several years is retention. I would like to work with you, as I said, on that issue.

Senator **LAUTENBERG**. No one ever asks the question, what the private sector pays a Senator. We don't want to review that now. We will have to find out now if we are overpaid in government with respect to the private sector.

Dr. **PORTER**. Maybe we tested the market.

Senator **LAUTENBERG**. I tested the other way. I have proved that there are other benefits worth acquiring, worth having, than just making money, and I think that is probably true of what we see with lots of good people who have gotten themselves into government careers.

How about the special skills having to do with hydrology, but not specifically hydrologists. That is pretty skilled, but hydrology engineer, whether that is a different skill, should there be some different pay scale addressing the shortage? There is a problem with that, because if you say accountants, then how about other professions? And so it goes, and then we just lifted up the whole thing.

If we do it for engineers, as you heard me say before, then why not do it for those skills that are just very, very tough to come by?

Mr. **KINGHORN**. Mr. Chairman, I think the issue, as GAO mentioned, is it has become ultimately a nightmare in the administration. Mr. Longest, who is heavily involved in the Construction

Grant Program, would probably indicate that back in the early days there, the same question was raised: We couldn't pay engineers enough to get them. If you go to engineers, you go to chemists, scientists, other kinds of scientists; you go to accountants. It becomes extremely difficult in terms of equity, not only within the agency, but also across government.

My general feeling on pay as a manager myself and a career manager for 17 years is you are never going to crack that nut, but there are other things you can and should do in terms of the mission of the agency, sitting down with people and managing them day-to-day.

We have a mission, this agency, that you have heard. Obviously, it is a place we draw people. I don't think we are going to keep people on the basis of pay. I would like to focus, certainly, my remaining career years on issues that I can really resolve. There is an equity question. We have other managers in this agency who are engineers and scientists who don't work in Superfund. It is just a very difficult thing to get into.

Senator LAUTENBERG. One last thing on the manpower side. GAO said in their findings that approximately one-third of the staff planned to look for other jobs this year, is that a concern of yours?

Mr. KINGHORN. Yes. I certainly, as a manager—and I am probably one of the one-third. I plan for new jobs, every year, but I am still here, and I love it, and for other reasons than money.

Senator LAUTENBERG. That is about the frankest admission I have heard since I have been here. You are not allowed to advertise in a hearing, Mr. Kinghorn.

The lobbyists who may be interested you can see outside the room.

Mr. KINGHORN. It is a serious question. When you look at the numbers, approximately one of every three or one of every two people in the Superfund next year will be new to the program. I think you have got to address that issue, and I think it is not just Superfund. I have been talking to other managers in this Agency as we approach middle age as an Agency.

We don't have the simplistic kinds of draws we had in the past. I mean, this program, these managers here, who actually run the program part of it, it is by far the most complex program we have ever had to administer. It is much more on line, where it is not a formula grant program to the States that we can either give them the money base on a statutory amount. Everything we do is unique, which I think gets into the rapid competition program that GAO mentioned. I think we have to do it in terms of register, career paths.

Everything you mentioned, I don't need to go over again, but it is a very considerable problem. One-third of this agency, about 30 percent of this agency, is new to this agency in the last 3 or 4 years. That is not just from funding. It is a very difficult managerial problem.

Senator LAUTENBERG. Mr. Longest, does it make sense to get a little more aggressive about the project management approach to Superfund and to bring all of EPA's experts and skills to bear on the Superfund problems? Won't that help us get better and more efficient programs with fewer delays, lower cost, lower stress on staff? Are we doing that? Should we be doing more of it?

Mr. LONGEST. I understand you are referring to the project management approach?

Senator LAUTENBERG. Yes.

Mr. LONGEST. Yes, sir, I think that is crucial. We are trying to do two basic things in the program right now at one time, and that is gear up a new program by developing the new regulations, the NCP, and at the same time, give guidance to the regions on how to manage projects, and as many have said before me, we have a lot of young, inexperienced people that are very bright, very energetic in the agency.

So we need to work with them to develop the skills, and it is not so much the scientific/technical as it is the management, the project management that you mentioned. That is the skill we need within the agency. We, through contracts, can hire the scientific skills that we need. We need the project management skills.

One other thought on the inexperience that we have, looking back to my years in government, frankly, I would rather be faced with the energetic, young, very intelligent person that I can train than the person that I would have to go around and periodically wake up. So I look at it as a challenge, and I enjoy it.

We need the help, but I am satisfied with where we are in the program. I think we need to look at where we will be in the program in the next couple of years.

Senator LAUTENBERG. Are you getting some of Mr. Kinghorn's regional staff to work with your program staff?

Mr. LONGEST. Yes. We had problems on both sides in the past. We have worked together since the issue we had with the IC's; specifically, jointly in an effort, we are working with the management and the waste management directors to develop the contract support mechanisms that we need, not necessarily the technical engineering, but looking at the contract support, the administrative support to document the fiscal aspects of the contracts.

I think it is very important. It has become a very cooperative exercise, and I am pleased with the progress to date. It, obviously, varies from region to region like you have heard this morning, but we are on the right track now.

Mr. KINGHORN. Mr. Chairman, just a quick statement. One thing that I really do appreciate is that through the pulling together of what, in our agency, is called the program and the management sides of the agency, and I represent the management side, one thing we try to do, and have done several studies recently which your staff is aware of, is to get people doing the things they like to do and that they are good at doing.

One thing we found which is a factor in retention is that many of the people in the Superfund program really don't like paper, and I don't blame them, but they don't like it. They don't like the financial accounting information they have got to go through. So as a cooperative kind of statement we have made, we are getting the accountants who work for me or my counterparts in the field to do as much accounting as they can in the field to support this effort.

That may sound like a quick fix, but in the daily life of a GS–11 or 9, who doesn't see his life as filling out forms, in the long run, that may help retain people.

Senator **Lautenberg**. I agree with your conclusion. I have seen it from some of the things we have heard from EPA and the Superfund that they don't like the accounting side of things, and as a matter of fact, I think at times, it is a very significant penalty to the government. The fact is that we have found horrible examples of overcharges, overcharges being submitted and paid for, and some glaring niches in the process.

I would just like to wrap up with one general question. EPA confirms to staff that on average, it will take 6 to 10 years to complete clean-up of an NPL site. Do any of you believe that we can convince the American people that this is an appropriate time frame for doing this and, therefore, then, what is the forecast for the day at which we are going to be able to simply take those sites that are presently, as we have a bunch today, and say, "That is behind us"?

Even the youngest person in this room is not likely to be here based on the arithmetic that we have to do here.

Dr. **Porter**. Mr. Chairman, I am not at all satisfied with that. I would like to report that Lee is perhaps even more unsatisfied with that pace. Some projects are very, very complex—cleaning up Lowell Harbor in the Boston area in New Bedford and so forth, but there are sites that aren't nearly that complex. The whole thrust of what we are trying to do now, is the project management approach, getting on the critical path schedule, getting management positions on the project, keeping down down times.

We have a lot of down time on project, frankly, we have situations where you finish one phase, and in six or eight months, another phase starts. We need to get on a critical path like any other project. I would like to say that change rates a bit.

I can't give you precise numbers. But we do have a lot of regulations on how to do this set in law. But using more removal authorities, by going fast track on these projects, I think we ought to be able to cut our time by several years. I think you will have a running edge.

I think some projects may require 20 years of pumping groundwater to pump it clean. We can tell the public, "The remedy is in place, the pumps are operating, it is safe to live there," et cetera.

I am not at all satisfied with that kind of situation, and we are going to be working very hard to reduce that dramatically.

Senator **Lautenberg**. I believe you, and I hope that the focus is on that area. That is where the pay-off is going to come, through all the labor, all the effort, all the resource application that has gone into this.

I will close by just saying this: That what we have seen, I think, today is not much different than you often see in large organizations. That is that the field management, given the task, often finds ways to get it done that we, or those in the head office, don't seem to be able to get their hands on as quickly. I think there is a tendency to defend whatever it is that exists, whether it is a slower pace, understaffing, et cetera. This hasn't happened without serious people going to work each day and trying to do a job.

But somehow or another, it just doesn't get done the same way at the head office as it does in the field. I would urge you, Win, your lofty position within the agency, and I use that in the hierarchial sense, to try and include more of your field people in problem solving, because the pace is too slow. It is simply that.

These arguments that go on between those of us in the Senate and those of us in the Congress and the agency has got to stop along the way and say, "Okay, this is what is done is done." The battle was fought. The war is over. And I would try to enlist your fullest support to getting on with the job; let's get rid of these sites. Let the American people know that the work that we are doing is as productive as they expect it to be and we would say good-bye to some of these ugly sites that soil our landscape and threaten our health.

I thank you very much for your testimony.

Senator Pressler?

Senator **Pressler**. No. That is all right.

Senator **Lautenberg**. The subcommittee is adjourned.

Dr. **Porter**. Thank you very much, sir.

[Whereupon, at 11:55 a.m., the subcommittee was recessed, subject to the call of the Chair.]

[Statements submitted for the record follow:]

United States General Accounting Office

GAO

Testimony

For Release
on Delivery
Expected at
9:30 a.m. EDT
Thursday
July 23, 1987

Superfund Work Force Issues

Statement of
Hugh J. Wessinger, Senior Associate Director
Resources, Community, and Economic Development
Division

Before the
Subcommittee on Superfund and Environmental
Oversight
Committee on Environment and Public Works
United States Senate

Mr. Chairman and Members of the Subcommittee:

The Environmental Protection Agency's (EPA) Superfund program faces the task of cleaning up perhaps thousands of sites contaminated by hazardous wastes. To do so, EPA will need the services of various skilled personnel in scientific and technical fields. Concerned that EPA may face a shortage of skilled staff, the Congress, when it reauthorized and amended Superfund in October 1986, directed that GAO study the types and extent of skilled personnel shortages in the Superfund program, employee turnover, pay differentials with the private sector, and employee training needs.

We have completed our study and have sent EPA a draft of our report so that we can obtain and consider the Administrator's comments before we issue our final report to the Congress. Mr. Chairman, we are pleased to be here today to discuss our tentative findings.

RESULTS IN BRIEF

Briefly, we found that Superfund employees believed there were staffing and skill shortages in the program in early 1987. Staff increases for fiscal year 1987, if fully used, should have been sufficient to alleviate these shortages. However, EPA needs to use more objective techniques and productivity measures to better support and analyze Superfund's future staffing and skill requirements.

Superfund employee turnover, which had been below the turnover rate for all federal employees, more than doubled to surpass federal rates in fiscal year 1986. Advancement opportunity was the most frequently cited reason employees left Superfund but EPA has taken action to enhance promotion opportunities.

Superfund employees, like federal employees in general, receive less pay than do their private-sector counterparts, according to the government's pay survey. Although EPA is considering ways to increase Superfund employee compensation, we do not as a rule favor separate pay systems because of the pay inequities they would create within the government. Additionally, while Superfund employees told us that they need more training, EPA has developed plans to address training needs.

BACKGROUND

The Superfund program, enacted in 1980, provided EPA with $1.6 billion to (1) remove hazardous substances, (2) initiate long-term remedies to clean up contaminated land and groundwater, and (3) initiate legal action to secure clean-up or cost recovery from responsible parties. The 1986 amendments provided an additional $8.5 billion and set ambitious schedules for assessing sites and initiating clean-up actions.

As shown in attachment I, EPA used over 3,800 people working the full-time equivalent of 1,643 employees in fiscal year 1986. These employees came from over 120 occupations, of which more than half were engineers, scientists, lawyers, and other technical specialists. To obtain information on the many issues we studied, we relied heavily on questionnaires and interviews with these employees. In all, we received questionnaire responses from about 700 current and former Superfund employees in the technical and scientific occupations listed in attachment I, and interviewed 55 program managers at EPA headquarters and at 6 EPA regions.

STAFFING AND SKILL NEEDS

Our survey of Superfund employees showed that about 80 percent worked in units that they believed were understaffed in early 1987. Employees perceived that the program was understaffed by about 36 percent, or from 375 to 600 positions,[1] at that time. Also, as shown in attachment II, most employees reported they needed the services of hydrologists, toxicologists, chemists, and soil engineers. Many, however, reported problems obtaining these services, which delayed or affected the quality of Superfund activities. For example, because needed specialists were not available, our survey showed that about half of the current employees had to delay their work for at least a week or more.

At the regional offices, program managers generally told us that they were short of staff, including such disciplines as project managers, on-scene coordinators, hydrologists, and toxicologists. Program managers also said that such staffing and skill shortages delayed and impaired the quality of Superfund activities. For example, in EPA's San Francisco region, one official told us that shortages in their region resulted in slippage in site activities and less time for reviewing project proposals.

EPA management in Washington concurred that shortages no doubt existed in early 1987, but they noted that staffing has since been increased considerably. Congress authorized EPA to use an additional 773 Superfund positions for fiscal year 1987, over and above the 1,643 that EPA used in fiscal year 1986. If they had been fully used, these positions should have been sufficient to alleviate perceived shortages. However, EPA expects that a considerable number of these positions will go unused during fiscal year 1987 because of the short time EPA had available to fill them.

While a shortfall is expected, EPA has requested 2,716 Superfund positions in its fiscal year 1988 budget, or 300 more than the Congress authorized for fiscal year 1987.

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[1] Positions are expressed as full-time equivalents (FTEs).

Our review of EPA's work force planning system raises questions, however, about the reliability of EPA's estimated staffing requirements to carry out planned Superfund activities. EPA relies largely on managers' judgments of the time required to carry out various Superfund activities in establishing the program's staffing requirements. This is an acceptable technique if more objective techniques are impractical. However, its primary disadvantage is that the time required to do a job is an estimate only and may vary widely from the actual time workers need, thereby resulting in over- or underestimating staffing needs.

EPA now has enough experience in operating the program to compare estimated requirements to the actual time spent by employees in performing various Superfund activities. However, EPA does not routinely collect historical data--such as employee time records--in enough detail to help validate the reasonableness of its staffing estimates.

Similarly, EPA does not use productivity measures to help gauge how effectively and efficiently it is using its Superfund staff. EPA has the data to evaluate Superfund's productivity and the use of productivity measures would help EPA to evaluate differences between its regional offices in the type and size of the work force and methods of operation used to carry out Superfund activities. For example, EPA's Boston region uses a single project manager to handle both remedial and enforcement activities, whereas Chicago has separate project managers for each of these activities.

EMPLOYEE TURNOVER

As shown in attachment III, the rate at which EPA Superfund employees left the program was below the rate for all federal employees in fiscal years 1984 and 1985. The Superfund rate more than doubled between fiscal years 1985 and 1986, from 2.9 percent to 7.2 percent--surpassing the overall federal rate of 5.2 percent.

As attachment IV shows, several critical Superfund occupations had quit rates that were two to six times higher than the average for federal employees in these occupations. For example, the Superfund hydrologist quit rate of 14 percent was over 6 times higher than the rate for all federal hydrologists.

While Superfund employee turnover has been above federal rates, 34 of the 55 Superfund managers we interviewed did not consider employee turnover a problem. Of the 21 managers who did, some reported that turnover delayed or impaired the quality of Superfund activities.

Most of the Superfund managers we interviewed expected turnover to increase as the private sector lures even more employees away from the program. Our review confirmed this point, showing that over one-third of Superfund employees planned to look for other jobs during 1987. The Superfund work force is relatively young--over 60 percent is under the age of 36--and these younger employees historically change jobs more frequently than older ones. As the size of the Superfund staff expands, the work force is likely to remain young. These factors all suggest that Superfund employee turnover could remain relatively high.

One reason for the higher Superfund rate for fiscal year 1986 was its abundance of younger employees. But we also asked former Superfund employees to rate 17 reasons for leaving the Superfund program. Attachment V shows the results. It shows the percentage of former employee respondents who both rated each reason as major and indicated that they definitely would have stayed had conditions relative to this reason changed to their satisfaction. The data shows that more advancement opportunity was the most often cited reason. Also frequently cited were dissatisfaction with regional management, salaries, and use of employees' technical skills and disillusionment with clean-up progress.

Concerned with limited advancement opportunities, EPA revised its policies in October 1986 to make project managers and on-scene coordinators eligible for higher salary grades when warranted by the size and complexity of the sites managed. EPA also has designed separate career paths to enable chemists and general physical scientists to obtain higher grades without having to move into management positions. In addition, EPA is considering the results of an internal Superfund study, which recommended improving compensation for Superfund employees through bonuses and added fringe benefits.

PAY DIFFERENTIALS AND SUCCESS OF EMPLOYEE RETENTION PROGRAMS

According to the Annual Report of the President's Pay Agent,[2] federal civilian pay in general needed to be increased by about 24 percent as of March 1986 to achieve pay comparability with the private sector. However, federal pay increases in January 1987 were limited to 3 percent. On the basis of the private-sector pay data used by the pay agent, attachment VI shows that the pay for federal attorneys, chemists, and engineers--three key Superfund occupations--trailed those in the private sector by $7,800 to $41,300, or 25 to 68 percent, as of March 1986. In addition, our survey showed that former Superfund employees who took private-sector jobs received pay increases averaging $7,200.

The Office of Personnel Management can approve agency requests for special pay rates when it finds that private-sector pay substantially exceeds federal pay and significantly handicaps the recruitment or retention of well-qualified individuals. By narrowing the pay gap, these special rates have helped agencies to be more competitive and encouraged employees to stay longer. But among the Superfund technical and scientific occupations we studied, only Superfund engineers, like all federal engineers, received special pay rates.

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[2] A group composed of the Directors of the Office of Management and Budget and the Office of Personnel Management and the Secretary of Labor.

As previously mentioned, EPA is now considering ways to improve Superfund compensation through bonuses and added fringe benefits. As a general rule, we have opposed separate pay systems for specific employee groups, suggesting instead that any changes focus on resolving perceived inequities in the pay system that exist for all federal employees. This approach minimizes pay inequities within the government and precludes providing one agency with a competitive advantage over others in recruiting the same employees.

EMPLOYEE TRAINING NEEDS

Our survey also showed that about 60 percent of current employees believed that they needed more training to carry out their Superfund responsibilities. As shown in attachment VII, nearly a quarter of them believed they needed more training in each of the following areas: clean-up design and action, cost recovery, and legal case development. An EPA survey of Superfund training needs confirmed our findings.

Aside from needing more training, only about half of the current Superfund employees were satisfied with the training they had already received. Many identified problems with course content and delivery, management commitment to training, and the time employees have available to attend training.

EPA has developed a 2-year plan and drafted policies to improve its Superfund training program. When fully implemented, these plans and policies should help to resolve the course content and delivery and organizational problems employees identified. Concerning the remaining problems employees identified, Superfund staffing and training funds were recently increased significantly. These staffing increases may make it easier for employees to find the time to take needed training courses. However, as we previously mentioned, EPA did not expect that it would be able to fill many of the 773 additional positions authorized for fiscal year 1987.

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In summary, Mr. Chairman, we found that the Superfund program was likely understaffed in early 1987 and that staffing increases for fiscal year 1987 should have been sufficient, if fully used, to alleviate these shortages. We also found that EPA can improve Superfund work force planning by better estimating staffing requirements and analyzing productivity. Our draft report includes proposals for the Administrator to deal with these issues. While Superfund employee turnover has been increasing, EPA has taken some actions that may help to reduce the trend. The pay comparability gap obviously affects turnover, but we do not favor special pay systems for individual programs or agencies because of the equity problems this could cause within the government. Lastly, EPA needs to upgrade its Superfund training program to better meet employee training needs, and it plans to do this over the next 2 years.

Mr. Chairman, this concludes my prepared statement. I would be pleased to respond to any questions you might have at this time.

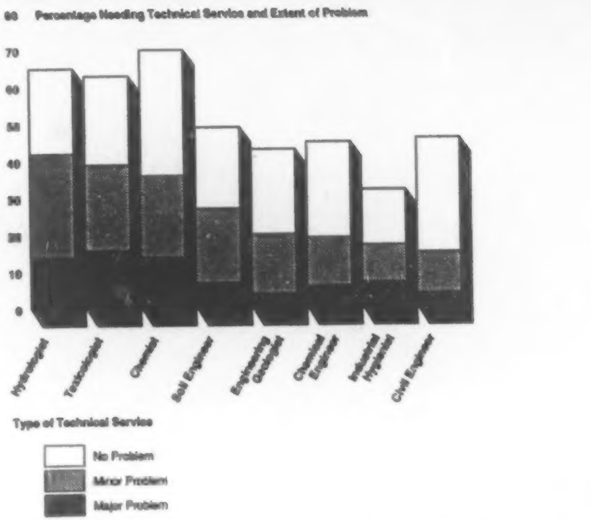
Occupational Distribution of Superfund Employees and FTEs[a] for Fiscal Year 1986

Occupational area	Number of Employees	Number of FTEs	Percentage of total FTEs
Technical:			
Physical sciences	740	384	23
Engineering and architecture	574	335	21
Environmental protection	318	187	11
General attorney and paralegal	310	128	8
Contract and procurement	84	36	2
Biological sciences	80	25	2
Public affairs	50	21	1
Subtotal	2,156	1,116	68
Other:			
Secretary and clerk typists	492	193	12
Accounting and budgeting	357	87	5
Miscellaneous	830	247	15
Total	3,835	1,643	100

[a] Full-time equivalents.

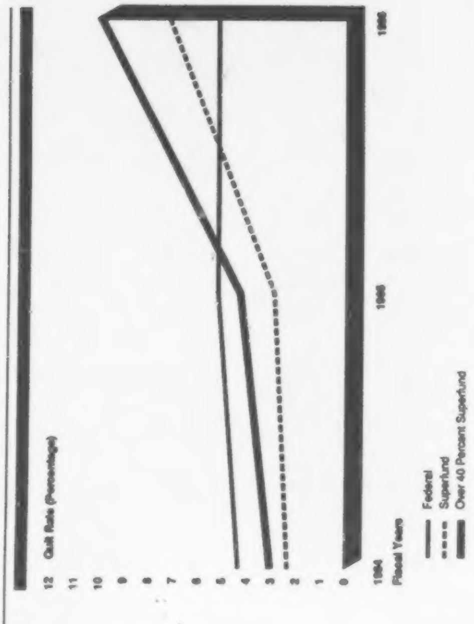
Source: EPA.

Employee Experience in Obtaining Technical Services



Note: Responses do not total 100 percent because some employees indicated that they did not require that type of skilled service.

Comparison of Quit and Quit/Transfer Rates for Superfund and Federal Employees, Fiscal Years 1984-86



Quit Rate Comparisons for Critical Superfund Occupations

	Quit rates			
	Fiscal year 1985		Fiscal year 1986	
Critical occupation[a]	Superfund[b]	Federal	Superfund[b]	Federal
Environmental engineer	3.1	4.7	7.6	5.8
Hydrologist	**4.7**	**1.6**	**14.0**	**2.1**
Attorney	4.1	7.3	6.2	7.1
General physical science	2.9	2.7	5.2	2.5
Contract & procurement	0.0	2.8	0.0	2.7
Environmental protection specialist	2.8	3.1	5.2	3.1
Environmental protection assistant	0.0	7.1	5.7	2.7
Geologist	**4.5**	**1.2**	**4.7**	**1.7**
General biological[c]	1.9	1.9	0.0	1.7
Chemical engineer	0.0	4.0	4.3	4.0

[a] Includes those critical occupations identified in EPA's Superfund work force planning project, except for administrative and clerical, which were not defined well enough to facilitate rate comparisons. Occupations are listed in the order of criticality.

[b] Rates were generally higher for those employees in these occupations who spent over 40 percent of their time on Superfund.

[c] Includes Toxicologist.

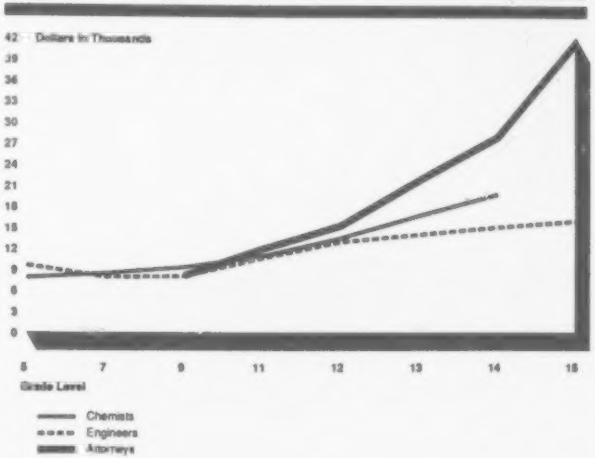
Source: GAO from EPA computer data and the Office of Personnel Management.

ATTACHMENT V

Reasons 117 Former Superfund Employees Rated for Leaving Superfund to Take Other Jobs

	Percentage of former employee respondents		
	Rating reason		Both rating reason as major and definitely stayed had conditions changed to satisfaction
Reasons	Major	Minor	
More advancement opportunities	67	16	28
Regional management	28	19	14
Increase in salary	40	23	13
Poor use of their technical skills	23	26	13
Disillusioned with clean-up progress	23	24	11
Problems with immediate supervisor	17	16	9
Change in work location	21	13	6
Improved physical work environment	17	20	6
Poor administrative or clerical support	19	22	5
Excessive work load	19	12	4
Program guidance from headquarters	19	19	4
Too much paperwork	16	22	4
Too many reviews	24	18	3
Better fringe benefits	7	19	3
Less out-of-town travel	4	6	3
Career change	11	9	2
Avoid exposure to hazardous substances	0	3	0

Annual Pay Comparability Gap for Selected Federal Employees, March 1986



Note: Grade 9 is the entry level for attorneys. Private-sector pay data was not available for chemists to make comparisons beyond grade 14.

Current Employees' Training Needs by Superfund Tasks

	Percentage of technical employees	
Tasks	Working on task	Requiring training
Remedial design	41	29
Remedial action	45	27
Contracts management	66	25
Negotiations and settlements	54	22
Legal case development	45	21
Cost recovery	41	20
Remedial investigations and feasibility studies	50	18
State programs and liaison	49	18
Oversight of responsible parties	45	17
Administrative orders	48	16
Identification of responsible parties	44	16
On-scene monitoring and oversight	33	15
Removal actions	30	13
Removal investigations	28	11
Site inspection	30	9
Federal facilities oversight	20	9
Legal consultation	30	8
Preliminary assessment	29	8

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-227292

August 13, 1987

The Honorable Frank R. Lautenberg
Chairman, Subcommittee on Superfund
and Environmental Oversight
Committee on Environment and Public
Works
United States Senate

Dear Mr. Chairman:

As requested in your August 6, 1987, letter, we are enclosing our responses to questions submitted by Senator John Warner. These questions are a followup to the July 23, 1987, hearing on Superfund manpower issues before the Subcommittee.

If you or your staff need additional information, please call me on 275-5489, or Mr. Lawrence Dyckman, Group Director, at 382-4326.

Sincerely yours,

Hugh J. Wessinger

Hugh J. Wessinger
Senior Associate Director

Enclosure

Questions and Answers Concerning Superfund Manpower Issues

1. Given your experience with other federal agencies with highly technical missions, are the problems in the Superfund program typical or atypical? If atypical, please elaborate.

GAO Response: We believe the problems in the Superfund program are somewhat typical of the experience of other federal agencies. While more advancement opportunities was the most frequently cited major reason employees left Superfund, advancement can and generally does result in increases in employee pay. As such, an employee's dissatisfaction with advancement opportunities may be a subtle way to express dissatisfaction with his or her salary. In this respect, our recently issued report, Federal Workforce: Pay, Recruitment, and Retention of Federal Employees, (GAO/GGD-87-37, Feb. 10, 1987), contains information on the problems seven agencies and three military departments have had in recruiting and retaining scientists and engineers. The problems were largely attributed to the pay comparability issue.

2. To what extent are the problems in the program driven by the limitations of the civil service system?

GAO Response: The civil service system does affect the recruitment and retention of federal employees. In addition to pay problems, our February 10, 1987, report also stated that several civilian agencies had identified other problems, such as slow hiring process and a poor image of federal employment, that contributed to their recruiting difficulties. In addition, we reported that aspects of the civil service system work to reduce federal employee turnover, especially the lack of portability of benefits under the Civil Service Retirement System, a situation that was recently changed by the enactment of the new Federal Employees Retirement System. However, a variety of organizational, personal, and economic factors also influence separation decisions. These factors may include the particular occupation; the age, sex, and education of employees; and the state of the labor market.

3. EPA has taken, or plans to take, a number of actions to address some of the problems outlined in your audit. In your opinion, taken as a whole, will these actions result in significant improvements? If not, what additional steps could the Agency take?

GAO Response: EPA has taken or plans to take actions to improve advancement opportunities and to improve Superfund employee training. If properly and fully implemented, these actions should result in improvements. However, many factors affect employee decisions to leave or stay and, therefore, it is difficult to say for certain whether these actions alone will reduce the turnover rate so that it is more in line with the average rates for all federal agencies. Likewise, it should be noted that fiscal year 1986 was an atypical year for the Superfund program, given the delays in program reauthorization and the uncertainties this no doubt created for many Superfund employees. Moreover, fiscal year 1986 may have also been the high side of a cyclical pattern, considering that Superfund turnover rates, which had been lower than the overall federal rates in fiscal years 1984 and 1985, rose above the federal rates in 1986.

For these reasons, we believe that turnover in the Superfund program should be closely monitored. In addition, EPA needs to be in a position to act to address problems as they become evident. To do so, EPA should have information available on the extent of employee turnover and employee reasons for leaving the program. The more detailed such information is, the easier it will be for EPA to identify problems and formulate potential solutions. Quantitative data also are needed on the impact of employee turnover on program operations and costs, including direct and indirect costs such as recruitment and training costs. These data are needed to help determine the cost effectiveness of potential corrective actions.

STATEMENT OF
J. WINSTON PORTER
ASSISTANT ADMINISTRATOR
FOR SOLID WASTE AND EMERGENCY RESPONSE
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

July 23, 1987

Good morning, Mr. Chairman and members of the Subcommittee. I am J. Winston Porter, Assistant Administrator for Solid Waste and Emergency Response at the U.S. Environmental Protection Agency (EPA). With me today are Morgan Kinghorn, Acting Assistant Administrator for Administration and Resources Management; Henry Longest, Director of the Office of Emergency and Remedial Response; and Gene Lucero, Director of the Office of Waste Programs Enforcement. Three EPA Regional Waste Management Division Directors are also present today. They are Stephen R. Wassersug, Region 3; Patrick Tobin, Region 4; and Robert L. Duprey, Region 8.

It is a pleasure to be here today to discuss the Agency's management and implementation of the Superfund program. Over the first five years of the Superfund program, we learned a great deal and have started work at many Superfund sites. Then for over a year, we went through a slowdown of the program while reauthorization was debated. With the passage of the Superfund Amendments and Reauthorization Act of 1986 (SARA), we have now had about nine months of ramping up the program. We are now working on how to implement the broad directions given us by Congress.

In my prepared statement, I want to describe first the current program status. In this section, I will provide some historical perspective, outline the present workload, and indicate near-term priorities. Following this, I will summarize several areas of program improvement that may be of interest to you, including project management and execution, an alternative remedial contract strategy (ARCS), additional emergency removal contract services (ERCS), and human resources management.

I. PROGRAM STATUS

The Superfund site response program has three major elements -- removal activities, longer term remedial activities, and the enforcement program. I will briefly discuss each of these activities. All of the numbers I will use in my discussions are as of May 31, 1987.

Removals

The removal program has been highly successful throughout the life of Superfund. In this activity, direct action is taken to correct an obvious problem. For example, leaking containers may be removed from an abandoned site, or concentrated liquids or sludges may be treated on-site or taken elsewhere for treatment or safe disposal.

We have started over 900 removal actions at NPL and non-NPL sites. More than 800 removal actions have been completed. I might add that some removals are quite extensive, involving significant engineering and requiring several million dollars to complete.

Our projection is that in fiscal year (FY) 1987, we will initiate over 200 removals.

SARA provided for the expanded use of removals by increasing the normal cap on removals from six months or one million dollars to one year or two million dollars. A key priority of mine is to use this new authority to solve a greater fraction of the problem at a Superfund site through direct removal action.

Site Remedial Activities

For complex cases of site contamination we use a more extensive process, as called for in SARA and the National Contingency Plan (NCP). This overall remedial process involves the following steps:

- Maintenance of an inventory of potential Superfund sites called "CERCLIS." This inventory presently contains over 26,000 sites.
- The conduct of preliminary assessments (PA's) and site inspections (SI's) in order to decide which locations are serious enough to warrant Superfund expenditures. To date, almost 22,000 PA's and 7,000 SI's have been carried out.
- Based on information gathered in the SI, a site is scored using the Hazard Ranking System (HRS). If a site scores above 28.5, it may be proposed for the National Priorities List (NPL). Only NPL sites receive site remedial action funds from the Superfund. Currently, there are 951 sites either proposed for or on the NPL.

- A remedial investigation/feasibility study (RI/FS) is conducted for sites which are proposed for, or on, the NPL. There have been 520 RI/FS's started. Approximately 375 RI/FS's are now in progress. These RI/FS's may be conducted directly by EPA or by potentially responsible parties (PRP's).

- The result of the RI/FS is the selection of a remedial action for the site. This selection is called a Record of Decision (ROD). Over 180 ROD's have been completed.

- Finally, based on the ROD, the remedial design (RD) and remedial action (RA) are carried out. Since program inception, 152 RD's and 148 RA's, including 50 Initial Remedial Measures, have been initiated. The current workload involves about 100 RD's and about 60 RA's.

We have a number of significant priorities with respect to the site remedial activities. First and foremost is to expedite the work in the "pipeline" outlined above and emphasize finishing site cleanup. Cleanup may take the form of near-term work completion and deletion of the site from the NPL, or it may involve longer term remedies (e.g., pumping and treating contaminated groundwater for a number of years).

One specific area of emphasis is to reduce the time required to conduct RI/FS's. I have asked the staff directing this work to aim for 18 months or less for all but the most complex RI/FS's.

Another key priority is to meet the statutory deadlines called for in SARA. We are currently projecting that we will exceed the mandatory schedules for RI/FS and remedial actions.

Enforcement

The enforcement program, which may compel financially-viable responsible parties to either conduct or pay for removals or remedial activities, is a very important element of Superfund. EPA may settle an enforcement action so that PRP's directly conduct the work, or pay EPA or States to do it. If EPA does not settle, it may do the required work and later file a Superfund legal action to recover funds expended.

The program has resulted in commitments from PRP's with a value to date of approximately $650 million at over 400 NPL and non-NPL sites. Cost recovery actions to date have resulted in approximately $46 million remitted to the Superfund by PRP's.

A major Superfund priority is to increase the number of settlements where the work carried out directly by PRP's. Success in this area will increase our ability to use the Fund where no viable PRP's are available.

II. PROJECT MANAGEMENT AND EXECUTION

EPA's current Superfund approach involves a significant number of "pass offs" in conducting site remedial work. The historical approach has normally involved preparation of the RI/FS by a remedial (REM) contractor, use of contract labs to support the REM, management by the Army Corps of Engineers of the detailed engineering design by another contractor, and the construction of the remedy by yet another contractor.

We intend to move toward a project management approach by which one firm, or the Corps of Engineers, would provide overall technical direction of a cleanup under EPA or State management. In this approach, the project management organization would conduct the RI/FS, provide technical support for the ROD decision, do the design engineering, and serve as construction manager. This organization could, of course, use specialized subcontractors as appropriate.

This model, which is typical of much private and public engineering work, would serve to better focus accountability and responsibility for the cleanup project. By having one organization develop and implement an overall project schedule, I believe that considerable time should be saved.

III. ALTERNATIVE REMEDIAL CONTRACT STRATEGY (ARCS)

Another initiative set in motion prior to the enactment of SARA is the Alternative Remedial Contracts Strategy (ARCS). This contract reform initiative is designed to increase the number of contractors supporting the program and thereby establish a more competitive atmosphere. I believe this will result in expediting the cleanup process and improving the quality of work.

The current system awards most Federal lead RI/FS's to four "prime" contractors. Three of these four REM contracts have been very large (e.g., values of up to $200 million). A fourth, smaller

REM contract has recently been awarded to a minority business. This REM approach has often forced complex teaming arrangements to meet the workload requirements, which has had the tendency to fragment accountability, make project control difficult, and sometimes cause delays.

To mitigate this problem, we anticipate that the new contracting system will designate seven separate contracting zones, each of which will select contractors for Superfund work. The prime contractors selected for each zone will operate as "project managers," responsible for entire Superfund site cleanups from the remedial investigation stage through remedial design and construction management. While prime contractors can still subcontract work out to other firms, they will be ultimately responsible for all work conducted at a site. The ARCS contracts will be written to require this type of full service capability.

Increasing the number of zones in which prime contractors will be selected to seven will decrease the magnitude of the contracts and increase competition by allowing smaller firms to bid on work. Competition will be further stimulated through the selection of multiple prime contractors within each zone. Currently, we anticipate a minimum of three and a possible maximum of seven contracts per zone. In addition, the use of a large number of contract options over and above the base amount will allow us to reward good work with more work.

To promote the selection of firms of all sizes, companies will be asked to bid for one of two categories of project workloads -- 25,000 to 100,000 hours per year -- depending on the size of the company. Recognizing that many smaller companies do not have the capacity or resources to handle all the work associated with a given contract, firms will be permitted to team together -- a large and small firm, or two small firms, for example -- when bidding for work.

We plan to have the ARCS program fully in place nationwide during FY 1989. We are currently reviewing contractor prospects for the ARCS program in Regions 3 and 5.

IV. EMERGENCY RESPONSE CONTRACTS SERVICES (ERCS)

During FY 87, over 100 removals have been initiated. These removals range from cleanup of hazardous substance spills to cleanup of complex waste sites. Costs range from a few thousand dollars to several million. Many of the actions have resulted in the cleanup of sites which will never be placed on the National Priorities List.

The Agency is improving management and performance of the ERCS contracts by procuring additional cleanup contracts, awarding "award-fee" and fixed-price type contracts, and performing internal reviews. Seven ERCS Zone and 30 additional Regional and site specific contracts are proposed to replace the four contracts awarded in 1983 and 1984. Regional and site-specific contracts require less stringent response times and less comprehensive emergency response cleanup services than the Zone contracts. These smaller contracts are expected to increase competition and may lower costs due to the smaller geographical areas covered. The award-fee contracts should improve performance by giving contractors more incentive to perform in a technically outstanding and cost-effective manner.

The Agency has also instituted periodic reviews to address contract management. The reviews ensure that existing management controls are being used effectively for contractor monitoring, documentation, cost control, and site-specific funds control. ERCS Contracts Management Reviews have been conducted in all ten EPA Regions.

V. STREAMLINED SETTLEMENT DECISIONS

As noted earlier, a major priority of the Superfund program is to obtain good settlements from PRP's in order to expedite cleanup and to preserve the Fund for other sites. On February 12, 1987, Tom Adams, Assistant Administrator for Enforcement and Compliance Monitoring and I sent a memo to the EPA Regions with suggestions for streamlining the settlement process.

Perhaps the key instruction in the our memorandum was the setting of deadlines for settlement negotiations. Section 122 of SARA sets deadlines of 120 days from special notice for RD's/RA's and 90 days from special notice for RI/FS's. The memo provides that these deadlines may be extended only by the Regional Administrator (and only up to 30 days), or me in exceptional circumstances.

In addition, the EPA Regions have been urged to use the various tools provided by SARA to expedite settlements. Briefly, the important concepts are:

- Mixed Funding: EPA's goal is to secure 100% of the remedial costs from PRP's. However, through the "mixed funding" concept, EPA may accept PRP offers of less than 100% -- in order to settle quickly -- and sue later for the remainder from "non-settling" PRPs. Mixed funding occurs when EPA "mixes" Superfund monies with PRP payments to finance a cleanup.
- De Minimis Cash-Out: EPA may allow de minimis PRP's -- PRPs with a very minor contribution at a site -- to cash out and leave the process early when this could help to speed the process. Interim guidance was recently developed on the use of de minimis cash-out.
- Nonbinding Preliminary Allocations: SARA allows EPA, at its discretion, to provide a nonbinding preliminary allocation of responsibility (NBAR) where it may facilitate settlement. EPA will particularly consider the use of NBAR's where so requested by PRP's.

VI. HUMAN RESOURCES MANAGEMENT

In order to gear up for the enactment of SARA, EPA conducted a Superfund Work Force Planning Project to identify the future human resource needs of Headquarters, Regional, and laboratory components of the Superfund Program. The overall purpose of the project was to help managers:

- estimate the type of staff and the knowledge, skills, and abilities needed to accomplish the required work over the next three to five years;
- assess current work characteristics related to work and staffing requirements; and
- identify recruitment, retraining, and career enhancement options to ensure a capable work force.

The study matches the projected mix of Superfund staffing requirements over the next three to five years with the existing knowledge, skills, and abilities in the current staff.

The study found that over the next several years, the Superfund program will experience significant changes. For example, the program will place greater emphasis on innovative technologies, permanent site remedies and enforcement activities. It will delegate increasing responsibilities to the Regions and States and increase the use of single project managers. These changes will require program staff, whether newly recruited or retrained, to acquire or sharpen a range of knowledge, skills, and abilities.

Although the current staff's strong orientation toward engineering and physical/environmental sciences is appropriate for the program's future field operations, several occupations appear to be under-represented. In view of the direction the Superfund program will take in the future, the study found that additional expertise would be needed in the fields of hydrology, geology, and procurement and contracts.

In addition, current staff will need to be reallocated to meet Superfund's future work requirements. Nine critical program tasks will require a significant refocus of staff effort over the next three to five years. These critical tasks include Cost Recovery, Remedial Action, State Program Development, Remedial Design. Procurement Contracts, Responsible Party Oversight, Training and Technical Support, Cost Control, and Negotiations/ Settlements.

To meet these needs, the study recommends a series of specific recruitment, retraining, and career enhancement actions to ensure the success of Superfund program operations as required by SARA.

To carry out those recommendations, I established a Superfund Workforce Implementation Workgroup consisting of representatives from Headquarters and the Regional offices. The Workgroup will incorporate into existing management systems recommendations that will help institutionalize Superfund's workforce planning process. In sum, the findings and recommendations of the workforce planning project, coupled with the activities of the Implementation Workgroup, should go far toward bringing our program needs and projects in line with the new requirements established by SARA.

In closing, let me say that the Superfund program is a large and complex one. While we have made substantial progress in many areas -- for example, we have hired over 500 people in the last nine months -- there is considerable room for improvement. We are very interested in working with the Subcommittee in steadily improving the program.

This concludes my formal testimony, Mr. Chairman. I will be happy to answer any questions you may have, either now or in writing for the record.

APPENDIX
TO
STATEMENT OF
J. WINSTON PORTER
ASSISTANT ADMINISTRATOR
FOR SOLID WASTE AND EMERGENCY RESPONSE
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

July 23, 1987

The attached materials respond to questions raised in Senator Lautenberg's letter of invitation dated July 15, 1987.

Question 1

The Subcommittee also wishes to come to closure on a piece of old business. During an April 29, 1987, Subcommittee hearing certain assertions were made about the number of Remedial Investigations/Feasibility Studies (RI/FS's), Remedial Designs (RD's), and Remedial Actions (RA's) which had had funds obligated during the first half of FY 87. In the days subsequent to that hearing the Subcommittee learned that, in fact, the numbers provided in the hearing were inaccurate. It became evident that the Agency's Budget Office and its program office were unable to provide the Subcommittee with a single set of numbers or to share a common understanding of EPA's definitions of obligations and commitments.

In the Agency's prepared testimony, EPA should provide a definite answer for the record to the question asked at the April 29, 1987, hearing.

Answer

The Superfund remedial response obligations for the first two quarters of FY 87 are as follows:

	Number of fund-financed, first site starts		Total obligations ($ thousands)
	Superfund Progress Report	Adjusted	
RI/FS	22	16	$41,992
RD	9	28	$16,970
RA	5	5	$34,501

The March 31, 1987, Superfund Progress Report showed accomplishments that were subsequently found to be inaccurate. The correct numbers for the first two quarters are shown in the Adjusted column. The obligations figures include all funds obligated for the category including new starts, subsequent operable unit starts, and additional funding of previously started operable units.

Question 2

What are the definitions of financial commitment and financial obligation?

Answer

A commitment is a reservation of funds by an allowance holder for a particular purpose. It is not an obligation by the Agency -- it merely indicates that a particular office has earmarked those funds for a specific activity and intends to obligate them in the near future. The purpose of committing funds is to set them aside to assure their availability when the obligation occurs. Reports that reflect commitments provide managers with a more accurate financial picture of the status of their available funds by reflecting not only legal obligations which the office has made, but also those funds reserved for specific purposes.

An obligation is a legal promise to pay for a service or product. An obligation must occur before payment can be made. Obligations can only be made by authorized officers, i.e., contracting officers.

Question 3

EPA should also, in its prepared testimony, provide the Subcommittee with data regarding planned obligations for the first three quarters of FY 87. It should also provide actual obligations and commitments for the first three quarters.

Answer

The planned Superfund remedial response accomplishments for the first three quarters of FY 87 are as follows:

	Number of fund-financed, first site starts		Total obligations ($ thousands)	
	Planned	Actual	Planned	Actual
RI/FS	63	*	$108,639	*
RD	57	*	$ 45,917	*
RA	18	*	$120,501	*

* Actual quality-assured data is not available until 45 days after the end of the quarter (August 15, 1987) and will be provided at that time.

Question 4

The Agency should include, as well, a discussion as to its ability to meet or not meet its planned Superfund obligations for FY 87. It should also identify any potential situation which may arise which could cause a situation where the Agency might have a shortfall in FY 87 funds because projects previously thought unlikely to be ready have, in fact, become ready.

Answer

We believe that we will meet our Superfund obligation targets. According to the current Superfund Comprehensive Accomplishments Plan, we have sufficient funds to start all RD and RA projects that will be ready this fiscal year. While it is always possible that some projects could end up ready to go sooner than was planned, we think this will be unlikely.

United States
Environmental Protection
Agency

External Affairs (A-100AE)
Washington DC 20460

EPA

Legislative Analysis

Honorable Frank Lautenberg
Chairman, Subcommittee on Superfund and
Environmental Oversight
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed are answers and supporting materials in response to questions directed by you and Senator Warner to Mr. J. Winston Porter, Mr. Morgan Kinghorn, and other EPA officials following the Subcommittee's July 23, 1987, hearing on Superfund manpower issues.

We hope that the information will be useful to you and the Subcommittee in the exercise of your oversight duties. If you have any further questions, please let us know.

Sincerely yours,

A. Henry Schilling
Acting Director, Office of
Legislative Analysis

FOLLOW-UP QUESTIONS FROM JULY 23, 1987, HEARING
SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
U.S. SENATE

1. For Mr. Tobin. The Agency's prepared testimony suggests staffing needs to meet SARA's interest in innovative and alternative technologies. Your Region has been a leader in this field. In that regard, please provide the Subcommittee with your sense as to the skill categories EPA will need in order to develop an effective innovative and alternative technology program.

Answer. In order to have an effective innovative and alternative technology program, it will be necessary to hire personnel who have at least 4 to 5 years experience in the private sector relating to hazardous waste disposal. Specifically, technical expertise in hazardous waste materials handling and high-temperature thermal destruction would be particularly beneficial. However, it is doubtful whether EPA could meet the salary demands of this type of individual.

If the new proposed non-supervisory GS-14/GS-15 position were used to entice experienced personnel from industry to the Agency, the current GS-12/13's would be antagonized. This would "encourage" them to leave EPA for better opportunities. Perhaps an IPA transfer between industry and EPA for a year might be a viable alternative for providing expertise to EPA.

If the Agency wants to develop the expertise in-house, the best skill categories to concentrate on would be chemical and environmental engineers. Their educational backgrounds best suit the innovative and alternative technology field.

Stephen R. Wassersug's response to the follow-up questions to the hearing on Superfund manpower issues held on July 23, 1987 by the Subcommittee on Superfund and Environmental Oversight.

QUESTION FROM SENATOR FRANK LAUTENBERG

2. In your testimony, you referred to a mentor program which has been established in Region III. Please explain for the Subcommittee what the Mentor Program is. Do all EPA regional offices have mentor programs?

The Mentor Program was an outgrowth of the Division's Work Improvement Committee. The purpose of the Mentor Program is to ease the absorption of new employees into the routine and work of the Environmental Protection Agency.

When a new employee is assigned to a particular section, an employee from that section, in a similar position, would volunteer to act as a reference point. If the new employee had any questions on procedure, supplies, format of documents, sources of information, etc., the volunteer (Mentor) would give guidance to the new person. The Mentor could also initially explain section procedures and let the employee know that he or she is available to answer questions. Eventually, a meeting with the Mentor, the new employee and the Supervisor would take place to discuss his or her progress and to answer any remaining questions.

As an added incentive to the Mentor, the information that he or she volunteered for the program becomes a part of his or her personnel file. The Mentor could volunteer for a period of time up to several months, by which time the transition for the new employee should be fairly well accomplished.

As a result of this program, the new employees gain a sense of the structure of the Region and feel they are part of a team. This program was established in Region III right before the large influx of new Superfund employees arrived. These new employees are being assimulated quickly because of the Mentor Program. They are able to make a contribution to the Agency in a short time and I feel this will only serve to aid the Region's efforts in retaining productive employees.

I do not know if all the other EPA Regional Offices have a Mentor Program. My division did send a memo to all the other Regional Division Directors informing them of the program (see attached memo). I have also attached a memo that was sent to the Section Chiefs in my division explaining the Mentor Program.

Attachments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Mentor Program
Hazardous Waste Management Division

DATE:

FROM: Roland W. Schrecongost, Deputy Director
Hazardous Waste Management Division (3HW00)

TO: All Section Chiefs
Hazardous Waste Management Division

To aid in the implementation of a new Mentor Program for new or reassigned employees, the Division is seeking volunteers to act as Mentors in each of the following job classifications:

Student Aides
Clerical and Support Staff
Technical Staff

The duties of the Mentor will include, for the technical staff, being available to answer general questions on program procedures, explaining the telephone system (FTS, etc.), the format for various written forms and general program information, etc., for a period of time not to exceed six weeks.

For the clerical and other support staff, the Mentor should be available to explain correspondence procedures, use of office equipment, telephone procedures (transferring calls, answering phone, taking proper messages, etc.), and general program information.

The training of student aides would require more in-depth involvement. Answering the telephone and taking accurate messages, notifying the office if they are to be absent, accounting for their whereabouts, are some of the important topics of instruction for the student aides, who come to us with virtually no experience or training.

As an added incentive, to recruit volunteers for this much-needed program, please inform your staff that their official personnel folder will be documented, indicating that they were a volunteer for the Mentor Program. As with any other voluntary duties, this will be taken into consideration at the time of the volunteer Mentor's supervisory evaluation.

An initial briefing for Mentors will be provided, at which time criteria for the Mentor Program will be discussed. Please forward names to my office by February 1, 1987.

cc: Stephen R. Wassersug (3HW00)
Bruce Smith (3HW10)
Robert L. Allen (3HW30)
Tom Voltaggio (3HW20)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Mentor Program **DATE:** MAR 10 1987

R.W. Schrecongost

FROM: Roland W. Schrecongost, Deputy Director
Hazardous Waste Management Division (3HW00)

TO: Division Directors
Region I, II, IV-X

The Hazardous Waste Management Division has recently established a Mentor Program in order to more effectively orient new employees and reduce the in-house training period necessary to incorporate them into the programs.

This is especially important with the large number of new hires as a result of the recent SARA allocations. We thought that some information on this program might be of interest to you. The process will be as follows:

1. Staff volunteers recruited for student aides, clerical/support staff, and training staff;

2. Mentor training sessions;

3. Mentor assignments;

4. Initial contact with new employee by mentor prior to EOD;

5. New employee regional initial orientation by regional training office (formal introduction of mentor at this point);

6. Provide employee with an information packet and an office supplies package;

7. Mentors provide close guidance and assistance for first few days;

8. Mentors continue to be a contact point for information and technical assistance for several months;

9. Periodic review by work improvement committee of how the new employees are adapting/progressing (to insure against personality conflicts etc., and make necessary changes);

10. Monthly joint meetings with mentors and their charges; and

11. Mentor program review at least quarterly.

Attached are some additional material developed for this program.

Please feel free to call me at 597-9492 if you desire any additional information.

Attachment

cc: Stephen R. Wassersug

ATTACHMENT

PERSONNEL OFFICE INFORMATION PACKET

1. EMPLOYEES HANDBOOK
2. LIST OF HUMAN RESOURCES PERSONNEL
3. EMPLOYEE ETHICS
4. UNION AGREEMENT
5. INDIVIDUAL DEVELOPMENT PLAN
6. PERFORMANCE STANDARDS
7. EASE PROGRAM
8. EPA JOURNAL
9. REGIONAL TELEPHONE DIRECTORY
10. REGIONAL ORGANIZATION CHART

DIVISIONAL INFORMATION AND SUPPLIES PACKAGE INFORMATION

1. DIVISIONAL ORGANIZATION CHART AND STAFFING PLAN
2. ACRONYM LIST
3. SAMPLE LEAVE SLIP
4. SAMPLE ITINERARY
5. SAMPLE TRAVEL VOUCHER
6. SAMPLE TRAVEL AUTHORIZATION
7. LIST OF WORK IMPROVEMENT COMMITTEE
8. HOUSING INFORMATION

SUPPLIES

1. 4 PENCILS
2. 2 BLACK PENS

ATTACHMENT

SUPPLIES (cont'd)

3. 2 RED PENS
4. 1 PACK PAPER CLIPS
5. 1 ROLL SCOTCH TAPE
6. 1 DISPENSER
7. 1 SCISSORS
8. 1 LEGAL PAD
9. 1 WHITE NOTE PAD - 5x7
10. 1 DESK CALENDAR
11. 1 STAPLER
12. 1 BOX STAPLES
13. 1 LAMP (OPTIONAL)
14. 1 YELLOW TRANSMITTAL PAD
15. 1 TELEPHONE MESSAGE PAD
16. 2 FINE LINE PENS
17. 1 HIGHLIGHTER PEN (YELLOW)
18. 1 BOTTLE WHITE OUT
19. 1 DICTIONARY (FOR CLERICAL)
20. 1 RULER
21. 1 IN/OUT BOX

3. For Mr. Kinghorn and Mr. Porter. Please provide for the Subcommittee a plan by which EPA headquarters and its regional offices will recruit Superfund staff and retain Superfund employees, especially those who have developed significant experiential backgrounds in this field. Please include in the plan, for those Superfund initiatives expected to begin over the next four years, projections of the number of staff and skills needed in support of those initiatives.

Answer (on following pages).

Question 3

The Agency has responded quickly with a comprehensive hiring strategy to fill Superfund positions and will aggressively continue this approach in the upcoming fiscal year. The thrust of the strategy focuses on the following components:

- defining hiring needs
- developing a hiring strategy
- developing and promoting the use of Superfund Project Manager guidance
- monitoring the quality of new hires
- communicating the recruitment program

Defining Hiring Needs

SARA itself provided an early picture of the Superfund hiring needs for FY 1987 in authorizing 600 additional Superfund workyears. This authorization level, combined with a Superfund workforce planning study completed in anticipation of reauthorization, produced the FY 1987 hiring goals. The workforce planning study also analyzed Superfund needs for the next three to five years and identified engineers, physical scientists, chemists, geologists, hydrologists, and contracts/financial specialists as major areas requiring extensive recruitment.

Hiring Strategy

The Agency responded to the hiring need with a customized recruitment strategy for Superfund jobs. This strategy included several activities that will continue in FY 1988.

- Participation in recruiting events at 60 universities, conferences, and professional societies' meetings, as well as advertisements in newspapers, scientific journals, and professional society publications. These activities were targeted at well-qualified minority and female applicants in the science and engineering field.

- Inaugurated an Employment, Recruitment and Information Center to serve as a clearinghouse for applications for Superfund positions. A database of resumes was accessed through the computer system in the center and the applications of interested professionals were synopsized and made available to selecting officials.

- "Direct hire" authority was requested from the Office of Personnel Management for major scientific Superfund occupations. This authority was awarded to five of the Agency's regional offices for key scientific and engineering jobs.

Page Two

Superfund Project Managers

To assist Superfund organizations in awarding appropriate grade level credit for experience as a manager on a Superfund project site, the Agency issued guidance in October 1986 to help establish Superfund project manager positions at the GS-13/15 levels across the Agency. This guidance defines the criteria for positions and grade levels, particularly at the most difficult and priority sites on the National Priority List and has resulted in 13 new Superfund project manager jobs in the regions. Regional Waste Division directors and Personnel Officers are hopeful that the guidance will address the salary and promotion issues identified in the GAO study.

Quality of New Hires

Several steps were taken to ensure that the Agency recruits top-notch new employees in Superfund:

- Protocols for pre-employment screening and evaluation were instituted.
- Managers who serve as recruiters were trained in useful techniques for selection interviewing and recruitment.
- A training curriculum for new on-scene coordinators and remedial project managers was established and will be implemented in FY 1988.

Communication of Recruitment Program

To guide the development of many of these activities and to improve cross-organization coordination of the recruitment efforts, a recruitment task force was established in the Fall of 1986. This task force works in tandem with the national recruitment and employment center and includes representatives from OSWER, the regional hazardous waste offices, the Headquarters and regional personnel offices, as well as the budget, civil rights and contracts offices. Superfund program officials and personnel staffs meet regularly to discuss hiring priorities and review progress toward the hiring goals.

For Dr. Porter

Question 4: A number of times during your testimony, you said that manpower turnover was not of major concern to you. Acting Assistant Administrator for Administration and Resources Management Morgan Kinghorn, indicated that it is of concern to him, especially with regard to manpower retention. Perhaps Henry Longest's thoughts on the matter, as expressed in the July 24, 1987 Environment Reporter, presents the starkest contrast to your comments. The article states that Mr. Longest, the operating head of the Superfund program, said that, "aside from revising the national contingency plan as required under the 1986 Amendments, the primary goal of the Superfund program is to establish a stable, experienced managerial staff. Qualified personnel are needed in every step of the Superfund process, from site assessment through remedy selection to oversight of remedial action construction....Current agency employees also tend to have expertise in specific areas, but need training in borad management techniques...." While it is understandable that, in addition to manpower, you have other important problems to deal with, your testimony seems to be at variance with Mr. Kinghorn's and with Mr. Longest's reported comments. While it is recognized that you did not say that manpower issues are unimportant, you may have left that impression. Please explain for the record whether or not you consider EPA Superfund manpower turnover, shortages and skills important to the success of the program and why you believe so.

Answer: With respect to Superfund manpower issues, your point is well taken. I appreciate the opportunity to explain for the record the variances in testimony among Morgan Kinghorn, Henry Longest and myself as logical extensions of our respective organizational roles. As Assistant Administrator for Administration and Resurce Management (AA-OARM), Office Director for Superfund (OD-OERR) and Assistant Administrator for Solid Waste and Emergency Response (AA-OSWER) each of us holds a different perspective on Agency priorities, from which our respective priorities devolve to form a composite of the Superfund Program. Thus, it should not be surprising to note that each cross-section of the Superfund program may look different from the others. The important point is to see to it that they all fit together to contribute toward the cleanup of thousands of waste sites all over the country.

Moreover, if the element of time is examined more closely, it is evident that there are a number of different periods under discussion. The GAO report reviews past attrition rates during a period Superfund slowdown, while I am looking toward future program goals and major policy issues such as remedy selection.

As stated on page 92 of the transcript of the July 23, 1987 oversignt hearings in my response to your questions about staffing, it is not my biggest problem when wrestling with major policy issues. However, Henry Longest, as the Superfund program manager concerned with day-to-day implementation is faced more directly with staffing issues in his office and the Regions. On a time line from the period without funding before enactment of the Superfund amendments to the current fully funded period, manpower fluctuations have begun to stabilize and we are now in a period of progress in providing more adequate staffing. Process beyond program re-starts toward emphasis on program growth in productivity is also increasing. It is important to note that the quality of that growth (appropriateness of skill mix) outweighs the importance of quantity alone. We are definitely moving beyond program stabilization, reducing attrition and are working toward increasing the number of sites nearing completion of cleanup. This leads to Mr. Longest's recognition of the importance of qualified staff experienced in dealing with the often unique problems associated with Superfund cleanup activities. Thus, the position of Mr. Longest is not only fully compatible with mine, it is also carefully managed to provide the support needed to accomplish Superfund program goals in the spirit of legislative intent established by the Congress.

Question 5: In 1986, the General Accounting Office reports that Region IX had a 30.9 percent turnover rate, Region V had a 23.3 percent turnover rate, Region VI had an 18.5 percent turnover rate and Region II had a 13.2 percent turnover rate. Do you believe that turnover rates this high have adverse effects upon negotiations with potentially responsible parties, the oversight of contractors and sites and the time it takes to clean up a site? If not, please explain why you think not.

Answer: If the high turnover rates noted by GAO during the slowdown periods of Superfund were to continue, I would agree that negotiations with potentially responsible parties, contractor oversignt and durations of cleanups could well be adversely impacted. However, the Superfund program has moved beyond this period of time toward a more stable and productive pattern leading to waste site cleanups.

6. You stated that your region has done "retention studies to see what the issues are, as well as the strengths...to see what areas were weakened, what we can improve..." Please provide the Subcommittee with the results of those retention studies.

One of the retention studies Region III commissioned was a study of the "Region's organizational culture." The study was conducted by Dr. Zeitz, a specialist in organizational behavior from Temple University's School of Business and Management. Dr. Zeitz conducted over a hundred interviews and administered a lengthy questionnaire to all regional employees. A copy of the report containing all of Dr. Zeitz's results and the survey questions is included for your information. Also included is the Region's Human Resource Development Initatives for FY 1988. These initatives implement many of the recommendations of the Zeitz report.

The managers in my division reviewed Dr. Zeitz's report extensively. Partially as a result we developed procedures to improve management/employee relations such as our monthly awards program. We also looked at areas to improve employee satisfaction with their jobs and areas where we can help employees further their careers. To help further careers we have arranged for a local university to teach environmental courses at the Regional Office. These courses are introductory courses aimed at enabling our clerical staff to gain technical knowledge which will help them move into nonclerical positions. We also have some of our own experts teach courses that all grade levels attend. And on a case by case basis we pay for individuals to take job related courses at local universities which they sometime credit towards advanced degrees.

Other areas that we have begun to investigate, partially as a result of Dr. Zeitz's report, are a wellness program to help allivate stress and a day care center. All of these activities, I believe, will help Region III retain productive and dedicated employees.

The Hazardous Waste Management Division continuously reviews the status of the staff within the Division. At the beginning of the fiscal year, I sit down with the managers in my division and review the staffing plan. As a result of these meetings, the Division devises a hiring plan for the fiscal year. This hiring plan covers all job positions from clerical to specialty positions such as Toxicologists. The plan also addresses contingency plans to backfill positions if someone does resign or move to another job.

Region III's Office of Policy and Management tabulates the FTE (full-time equivalent) utilization rate every two weeks (see attached sheets). Division management evaluates the FTE utilization rate and our attrition rate and takes corrective action to ensure full utilization. One method used is the allocation of over-ceiling positions to make up any loss.

The Division also anticipates the next fiscal year's resource allocation and starts hiring personnel before the start of the fiscal year to effectively utilize the FTEs. Advance hiring is also done when the Region is going to receive an additional appropriation of positions at the mid-year point.

The Hazardous Waste Management Division is continuously searching for ways to improve the work environment in Region III and thereby retain more of its employees. The Division has established a Work Improvement Committee as a means to achieve this goal. There are numerous other activities conducted during the year to improve retention, such as exit interviews with resigning employees. The following items will give you further information on the Division's retention efforts:

1. Organizational Culture Study
2. Region III Human Resource Development Initatives for FY 1988
3. FY 1987 Region III FTE Utilization
4. Requests for Direct Hire Authority
5. EPA Region III Recruitment Plan FY87

RESPONSE TO SENATOR LAUTENBERG LETTER OF 8-6-87
[Question #7 for C. Morgan Kinghorn]

7. You requested an explanation concerning the difference between my testimony which projected that approximately 200 Superfund positions would go unfilled in FY 1987 and a June 30, 1987 FTE Utilization report that estimated a 391 position shortfall during this same period. Two factors need to be considered to understand the difference between these two figures:

   1) First, the Utilization report noted in your question does not take into account any additional employees hired beyond June 20, the end of the 21st pay period, in its projection of 1987 workyear utilization. Consequently, it calculates workyears for all of 1987 based on straightlining the number of employees on board as of the date the report is generated.

      This methodology generally provides a good rough approximation on FTE usage for our non-Superfund programs (Air, Water, Research and Development, etc.) because they tend to be rather stable over time. However, for a program experiencing rapid growth -- for example, Superfund which is adding between 100 and 150 new employees a month -- it tends to underestimate actual usage by a considerable amount.

   2) Second, the report does not take into account partial charging. Many employees who work in our non-Superfund programs do work for Superfund, and when they do, they charge their time to Superfund payroll accounts. If we add this "partial charging" from non-Superfund employees to the June utilization figures, the end of the year estimates would be reduced from 391 to 305 FTE, a difference of 86 FTE's.

My response to the Committee which indicated we would use about 90% of our 2416 workyear ceiling, or all but about 200 FTE, took these factors into account. In fact, our most recent utilization report dated July 31 projects a 268 FTE lapse for 1987. Which is close to the figure provided in my testimony. I have attached a copy of this report for your convenience (Attachment A).

Finally, the last part of your question asked us to discuss whether we would reach the workyear ceiling for each office receiving Superfund FTE as we entered FY 1988. I have attached a chart displaying our current hiring levels, which we expect will continue throughout the remainder of FY 1987 (Attachment B).

Assuming that our current average hiring rate of nearly 100 employees per month will continue -- and we believe it will -- we will begin FY 1988 with approximately 2500 employees on-board. This is approximately 200 employees under our FY 1988 ceiling. However, once we consider partial charging, which at current rates would account for approximately another 100 workyears, we are very close to our 1988 ceiling. While we do not have specific projections for each office in FY 1988 at this time, I believe this leaves us in a very good position to fully utilize our overall FY 1988 Superfund ceiling.

Attachment A

3-MONTH FACTOR

USING JULY ACTUALS AND A MAY-JULY, 3-MONTH, PARTIAL CHARGING FACTOR

RPIO	ADJ TOT SF PROJ	SF FTE CEILING	PROJ SF SURPLUS/ DEFICIT
OA	0.0	0.0	0.0
OEA	0.3	3.0	2.7
OIG	41.9	52.8	10.9
OPPE	4.7	12.8	8.1
OGC	6.0	9.0	3.0
OECM	83.4	93.9	10.5
OARM	139.6	207.2	67.6
OW	0.6	3.0	2.4
OSWER	304.9	338.6	33.7
OAR	1.2	5.0	3.8
OPTS	0.1	20.5	20.4
ORD	87.3	85.6	(1.7)
SUBTOTAL HQ	670.0	831.4	161.4
REG 1	122.2	127.8	5.6
REG 2	222.3	263.0	40.7
REG 3	188.3	194.9	6.6
REG 4	166.8	180.8	14.0
REG 5	288.3	286.6	(1.7)
REG 6	113.6	134.0	20.4
REG 7	97.8	101.5	3.7
REG 8	83.5	90.5	7.0
REG 9	122.9	124.1	1.2
REG 10	72.2	81.4	9.2
SUBTOTAL REG	1,477.9	1,584.6	106.7
AGENCY TOTAL	2,147.9	2,416.0	268.1

Attachment B

SUPERFUND ON-BOARDS* BY MONTH FOR THE LAST FOUR YEARS
(AS OF JUNE 31, 1987)

	FY 1984	FY 1985	FY 1986	FY 1987	FY 1987 Change from previous month
OCT	714	1129	1379	1652	
NOV	731	1165	1388	1653	+1
DEC	748	1187	1405	1676	+23
JAN	782	1182	1408	1721	+45
FEB	812	1213	1449	1838	+117
MAR	852	1247	1489	1839	+1
APR	917	1260	1533	1915	+76
MAY	938	1279	1581	2046	+131
JUN	985	1326	1650	2200	+154
JUL	1047	1359	1672	——	
AUG	1064	1373	1651	——	
SEP	1048	1366	1654	——	
FTE CEILING¶	1057.1	1357.1	1816.0	2416.0	
FTE UTIL.(†)	996.3	1350.3	1642.8	2111.1†	

— THE 2111 PROJECTED FTE UTILIZATION FOR FY 1987 (INCLUDING A PARTIAL CHARGING FIGURE OF 86 FTE) PLUS THE 305 FTE PROJECTED TO LAPSE, TOTALS TO THE 2416 FTE CEILING APPROPRIATED FOR FY 1987.

* REFERS TO ON-BOARDS-WHICH IS A PERSON WORKING FOR THE AGENCY.

¶ REFERS TO NUMBER OF FULL TIME EQUIVALENTS (FTEs) OR WORKYEARS APPROPRIATED TO THE AGENCY BY CONGRESS EACH YEAR.

† REFERS TO THE NUMBER OF WORKYEARS ACTUALLY USED BY THE AGENCY IN SUPERFUND AT THIS POINT IN TIME. PROJECTED FULL-TIME EQUIVALENT UTILIZATION, AS OF JUNE 31, 1987.

QUESTIONS FROM SENATOR JOHN WARNER

1. In the area of personnel management, are some of the steps taken in Region III transferrable to the Superfund program as a whole? If so, could you briefly explain how you would propose to incorporate them?

Some of the steps taken by Region III in the area of personnel management are transferrable to the Superfund program as a whole. A good example is the Job Fair that Region III held in February 1987. I have relayed information on the Job Fair and other activities Region III has undertaken to my counterparts in the other Regions at our quarterly Division Directors' meetings. As a result, several Regions have held job fairs. I have also sent my counterparts information on the Mentor Program and our Deputy Branch Chief developmental position. There is frequent contact with both Headquarters and the other Regional Offices so that ideas and suggestions are continuously exchanged.

EPA Headquarters does an annual review of each Region and sends a copy of the report to the other Regional Offices. The report highlights any innovative personnel activities the Region initiated during the year.

I think there is an adequate exchange of information in the Superfund Program. The fact that some Regions do not implement some of our programs may be due to various factors. Those Regions may not be able to obtain Direct Hire Authority from their Office of Personnel Management. This was a crucial step in Region III's ability to attract qualified people. Also, some programs may not be applicable in some of the smaller Regional Offices.

WARNER QUESTIONS

2. For Region VIII. For Region VIII, was the amount of time required to complete the agreements with other Federal agencies comparable to that required for privately owned sites? 3. Does the Agency have in place written guidance outlining the timeframes under which negotiations with other Federal agencies are to be conducted? If so, how does it differ from the requirements for private industry?

Answer. In Region VIII, the time required to complete compliance agreements with other Federal agencies has been essentially comparable to that of privately-owned sites. At the Rocky Flats Nuclear Weapons Plant, the Hill Air Force Base, and the Ogden Defense Depot, it took approximately 120 days to complete negotiation of signed agreements. In the case of the Rocky Mountain Arsenal, the initial agreement, signed in 1982, took approximately one year to complete. More recently, since the enactment of the Superfund Amendments and Reauthorization Act, the Region has seen the timeframes for negotiations with the Arsenal shortened.

We recently reached agreement on a set of interim remedies, which took approximately 90 days to negotiate. Region VIII has still not reached an overall settlement on a cleanup plan for the Rocky Mountain Arsenal. This is because the Arsenal is involved in complicated law suits with the Shell Oil Company and the State of Colorado. We are continuing to press for a negotiated settlement of these law suits.

It is Region VIII's understanding that the timeframes for negotiation with other Federal agencies are the same as for private facilities.

For EPA Headquarters Officials

Question 1: What specific steps are you taking to shorten the time necessary to complete cleanup actions, and will these actions allow the Agency to either meet or exceed the cleanup requirements in SARA?

Answer: As outlined in my testimony of July 23, 1987, we believe that we will meet cleanup requirements in SARA by giving priority to program activitires which will shorten the time necessary to complete cleanup actions. For example, SARA provided for the expanded use of removals from six months or one million dollars to one year or two million dollars. A key priority of mine is to use this new authority to solve a greater fraction of the problem at a Superfund site through direct removal action.

In the remedial program, greater emphasis will be placed on reducing the time required to conduct Remedial Investigations and Feasibility Studies (RI/FS) and expediting work in process to emphasize finishing site cleanup. In fact, we are currently projecting that we will exceed the mandatory schedules for RI/FS and remedial actions.

In the enforcement program, a major Superfund priority is to increase the number of settlements where the work is carried out directly by potentially responsible parties (PRPs). Success in this area will increase our ability to use the Fund where no viable PRPs are available.

I am also making time-saving changes in the Superfund project management approach to consolidate overall technical direction of a cleanup under one organization for continuity and accountability. This will modify Superfund's historic "pass off" approach to more closely resemble the more typical public and private sector engineering approach which has proven successful.

My contract reform initiative is designed to increase the number of contractors supporting the program and thereby establish a more competitive atmosphere. I believe this will result in expediting the cleanup process and improving the quality of work. This initiative was set in motion prior to the enactment of SARA as the Alternative Remedial Contracts Strategy (ARCs).

Last February I undertook the streamlining of the settlement process in a memo to the EPA Regions providing suggestions such as setting deadlines for conclusion of negotiations.

Finally, I have established a Superfund Workforce Implementation Workgroup to help institutionalize Superfund's workforce planning process to bring our program needs and projects in line with the new requirements established by SARA.

Question 2: In this regard, what leverage does the Agency have with the Department of Justice to move enforcement cases more quickly?

Answer: EPA and the Department of Justice (DOJ) are working cooperatively toward joint strategies for expediting the process of concluding negotiations and processing settlements (signing, lodging, entry of consent decrees). In addition, EPA's Offices of Waste Programs Enforcement and Office of Enforcement and Compliance Monitoring are conducting a review of the active case docket with DOJ to identify cases which should move more quickly.

EPA is considering incorporating more quantitative expectations into the Interagency Agreement with DOJ which provides their Superfund resources. Those expectations may include timeliness for processing referrals and settlements and concluding cases.

EPA is also getting DOJ more involved in the Superfund Comprehensive Accomplishments Plan (SCAP) process so that they have a better understanding of the relationships of their efforts to other activities at sites.

Question 3: Regarding enforcement against Federal facilities, what is the current position of DOJ concerning EPA's ability to bring a lawsuit against another Federal agency? Would having this ability provide EPA with significantly more leverage when dealing with these other agencies?

Answer: At the April 28, 1987 Congressional hearing concerning Federal facility compliance with environmental laws, F. Henry Habicht, Assistant Attorney General of the Department of Justice (DOJ), presented written testimony to the Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce. In this written testimony, Mr. Habicht presented DOJ's view of the accountability of Federal agencies to the public and Congress, including the enforcement tools that are available to the States, citizens and EPA to secure compliance by Federal facilities. Mr. Habicht stated in this testimony that DOJ has consistently taken the position that under the constitutional scheme, disputes of a legal nature between two or more Executive Branch agencies whose heads serve at the pleasure of the President are properly resolved by the President or by someone with authority delegated from the President. DOJ bases this determination on Article II of the Constitution which states that it is the duty of the President to "take care that the Laws are faithfully executed." DOJ has concluded that conflicts within the Executive Branch are resolved internally, under the supervision of the President or his delegate, and not in the courts. Furthermore, DOJ has determined that civil actions by one Federal agency whose head serves at the pleasure of the President against another such agency do not satisfy the constitutional requirement that a matter present a case or controversy under Article III. In effect, DOJ has concluded that EPA is constitutionally prohibited from pursuing civil actions against a Federal agency,.

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